



Aalborg Universitet

AALBORG UNIVERSITY
DENMARK

Cross-border Organization & Management of R&D Activities: The Case of Grundfos A/S

Collaboration processes in long-term focused, intra-organizational, multi-national, knowledge networks

Jensen, Marisol

DOI (link to publication from Publisher):
[10.5278/vbn.phd.socsci.00008](https://doi.org/10.5278/vbn.phd.socsci.00008)

Publication date:
2014

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):
Jensen, M. (2014). *Cross-border Organization & Management of R&D Activities: The Case of Grundfos A/S: Collaboration processes in long-term focused, intra-organizational, multi-national, knowledge networks*. Aalborg Universitetsforlag. Ph.d.-serien for Det Samfundsvidenskabelige Fakultet, Aalborg Universitet
<https://doi.org/10.5278/vbn.phd.socsci.00008>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- ? Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- ? You may not further distribute the material or use it for any profit-making activity or commercial gain
- ? You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.



CROSS-BORDER ORGANIZATION & MANAGEMENT OF R&D ACTIVITIES: THE CASE OF GRUNDFOS A/S

COLLABORATION PROCESSES IN LONG-TERM
FOCUSED, INTRA-ORGANIZATIONAL, MULTI-NATIONAL,
KNOWLEDGE NETWORKS

BY
MARISOL SANTIESTEBAN JENSEN

DISSERTATION SUBMITTED 2014



AALBORG UNIVERSITY
DENMARK



Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*

*Collaboration processes in long-term focused, intra-organizational,
multi-national, knowledge networks.*

Marisol Santiesteban Jensen

PhD Dissertation for the Degree of Doctor of Philosophy

December 2014

**Department of Business and Management
International Business Centre
Aalborg University
Denmark**

Thesis submitted: 9. december 2014

PhD supervisor: Professor Olav Jull Sørensen
Department of Business and Management

PhD committee: Professor Hans Gullestrup (chairman)
Dept. of Business and Management
Aalborg University

Professor Nancy K. Napier
Centre of Creativity and Innovation
Boise State University

Professor Nigel Holden
Centre for International Business
University of Leeds (CIBUL)
Leeds University Business School

PhD Series: Faculty of Social Sciences, Aalborg University

ISSN: 2246-1256
ISBN: 978-87-7112-218-3

Published by:
Aalborg University Press
Skjernvej 4A, 2nd floor
DK – 9220 Aalborg Ø
Phone: +45 99407140
aauf@forlag.aau.dk
forlag.aau.dk

© Copyright: Marisol Santiesteban Jensen

To the pursuit of learning, of continuous development and growth

Acknowledgements

First and foremost, I need to extend my profound appreciation for *Grundfos*, specifically Grundfos R&D for their inclusion, respect and open-mindedness through this learning journey. Specifically, I would like to extend many thanks to my advisor *Poul Toft Frederiksen* for his continued support and good counsel through the years. Additionally, I would like to thank all R&D Managers and employees in all three R&D units as well as in Headquarters that allowed me to dig deep. I feel privileged to have been given access to the '*kingdom of Grundfos*'. I have thoroughly enjoyed this journey and hope that you may come to also enjoy and find this study as useful for reflection as for inspiration for practical applications in the pursuit of improving collaborative processes in the Grundfos Global R&D Network.

I would also like to extend my appreciation and acknowledge *Olav Jull Sørensen*, my supervisor for his continued support, valued perspectives. Thank you for continually challenging me with constructive critical discussions and giving me the space I needed to further develop.

I would also like to extend my heartfelt gratitude to my colleagues at the International Business Center at the Department of Business and Management at Aalborg University. I particularly would like to thank *Li Thuy Dao* and *Reimer Ivang*. *Li Thuy Dao* thank you for sharing your experiences of the Ph.D. process. Thank you for your generosity and kindness. *Reimer Ivang* you have been an invaluable source of support with candid, clever and crisp insights. To my fellow PhD students both past and present, I would like to thank all of you for sharing in the journey and being a source of inspiration each in your own unique way and for this I am thankful and I want to take this moment to show my appreciation—*Jonas Eduardsen, Karina H. Jensen, Jimmi N. Kristiansen, Mohammad B. Rana, Andreea Iacob, Daojuan Wang, Heather L. Madsen, Daniel W. Ndyetabula and Yimei Hu*.

I would like to thank all my friends and family near, far, old and new that have supported and positively influenced this journey. Particular appreciation is extended to *Heather L. Madsen, Mathilde K. Pedersen, Kylene Bak & Angela Budd*. To *Heather L. Madsen* my dear colleague and friend thank you for countless captivating discussions and for traveling this road with me; what a gift it has been to share being double-stuffed with you. To *Mathilde K. Pedersen* thank you for your unwavering friendship and support through the years; your perspectives are always refreshing and motivating. To *Kylene Bak* thank you for your steadfast friendship and prayers through this journey, you have been a source of peace midst the unknown. To *Angela Budd* thank you for so wonderfully encouraging me; always giving a fresh and positive perspective.

I would like to thank God, my Lord and savior. I would also like to acknowledge *Apostolsk Kirke Aalborg* for their unwavering support throughout this journey. Particularly, the *RE:source group* that has always supported me and encouraged me through this long journey. I thank you and pray that all of you be blessed and encouraged.

To *Johnni T. F. Jensen*, you have been a bedrock of support from the onset, always accommodating and understanding. I am infinitely grateful. Thank you for traveling the PhD journey with me; everything is always better with you in it. To my wonderful Daniel thank you for bringing such incomparable joy and happiness into my life in the midst of my PhD journey. Thank you for gifting me the ability of rediscovering the simple things through your eyes. I am forever blessed by your presence in my life. I am honored to be part of your learning journey. Never lose your zest for learning, curiosity for discovery and your infinite happiness and humor, together with love, these things will take you farther than you could ever imagine.

Live long & Prosper

Executive Summary

This study investigates intra-organizational multi-national knowledge networks in large organizations such as, Grundfos, specifically the internationalization of their R&D activities. MNCs are expanding their R&D activities globally. MNCs' intra-organizational knowledge (R&D) networks are just as complex and ambiguous as inter-organizational networks and need to be considered as a useful setting for exploratory research. Employees may never know all of their colleagues, so trust, relationships and co-created meaning, i.e., mutual interest, play a vital role in collaboration. From a methodological standpoint the individual and their interactions with others and their environment play a significant role in how relationships develop, knowledge is shared and how the business runs overall. The literature and the data collected in this study point to the interrelationship between autonomy and interdependence as well as the symbiotic relationships between cognitive and relational perspectives. This is why perhaps organizations in this context find it highly difficult to sustainably manage knowledge and that is perhaps as this study indicates due to the fundamental aspects that even knowledge creation is more difficult because of the existing contextual complexity. This contextual complexity manifests itself through individuals and their interactions – the individuals/employees mostly see cultural differences and the distance as a primary source of complicating the situation, however, this is just one perspective and it is considered a predominate perspective because of the proliferation of certain types of theories that concentrate on conceptualizing culture as national culture categories. This together with human nature to infer visual cues first, such as appearance, which indicate where people come from, makes it easy to attribute dispositional cues based on these percepts. This is what can lead to stereotypes obscuring collaboration and general communication by focusing on the wrong cues. Refocusing on the context of the organization and its varying purposes will change individual perspectives and allow for a task focus to replace a national culture focus when working on these types of networks where intra- and inter-personal dynamics, reciprocity and a long-term focus are integral for work task success.

The PhD study's overall purpose can be summarized as understanding and improving how MNCs manage their global networks and how their employees can improve their collaboration and understanding of their global colleagues with the end goal of laying the foundation for creating and/or improving inter-cultural synergies in their global knowledge (R&D) networks. The aim of this dissertation is to contribute to the knowledge in three broad fields: 1) culture in organizations with a specific focus on complex intra-organizational multi- national knowledge networks and 2) networks understanding, exploration and 3) the individual and their interactions in this context. The research questions evolve from the iterative process. There are three levels of research depth, i.e., explanatory, exploratory and reflexive. The **main research question: *Which components are influential to the collaborative process within International R&D?*** focuses on the identification of the environment (explanatory). **Sub-question 1: *How do the most influential components interact?*** focuses on identifying the inter-relationship of the components: (exploratory). **Sub-question 2: *What are the combined effects of the components on collaboration and outcomes subsequently?*** focuses on identifying the best process of interrelationship for best collaboration and therefore best outcomes (reflexive).

The empirical context of the dissertation is Grundfos. Grundfos is a leading manufacturer of pump solutions. Grundfos wants to be known for more than pumps, with a focus on innovation and sustainability they are proud of their history and embrace the present and future to continue to grow the organization on a multi-national plan.

This study uses qualitative methodology with focus on Interpretivist and Constructivist epistemological and ontological paradigms, respectively. In line with these methodological choices and also due to the close collaboration with Grundfos this study has followed a multi-perspective approach combining: *case study*, *grounded theory* and *action research* all with the aim of remaining true to the empirical phenomena and providing the best results for both academia and business practice.

The hermeneutic qualitative nature of this study is illustrated by the design where the study is organized into Four overall Parts: Part I- *Setting the Scene* (Chapters 1-4), Part II- *Journey of Discovery* (Chapters 5-7), Part III- *Literature Reviews* (Chapters 8-11), and Part IV- *Identifying New Knowledge and Concluding Remarks* (Chapters 12-13). Additionally, the literature reviews present a cumulative process of learning gaining new understandings, continuously applying these to the next parts and Chapters.

Part I (Chapter 1-4) sets the scene and includes the introduction, methodology, case presentation and conceptual framework Chapters, respectively.

As part of the methodological journey undertaken in this study, Part II presents each R&D unit (DK, US and CN) respectively through Chapters 5, 6 and 7. Each Chapter organizes the data into three to four levels of themes and sub-themes and concludes with a unit summary of practical considerations. These reflections are digested into the overall analysis of how to improve collaboration processes for the Grundfos Global R&D Network and are not further analyzed as individual unit analyses.

Part III (Chapter 8-11) presents a review of the three main components of collaboration processes for intra-organizational multi-national knowledge (R&D) networks identified in this study as—*culture, networks and individuals and their interactions* as well as a review of the literature on the internationalization of R&D activities of multi-national organizations.

The review of the literature on the internationalization of R&D activities (Chapter 8) focuses on briefly understanding the tendencies and the current trends in this context that organizations should take into consideration when internationalizing their R&D activities. This review also brings to the fore key arguments for the need for knowledge workers to collaborate and build relationships to obtain sustainable task success within networks.

The review of the literature on culture (Chapter 9) is further organized into a cumulative three-part in chapter discussion, where part I focuses on deconstructing the concept of culture, part II focuses on deconstructing the concept of culture specifically in organizations and part III focuses on the ‘influencers of culture and their significance to business’.

Traditionally the literature on culture has wanted to integrate and pretend that anomalies, ambiguities or differences are inconsequential and should be removed. However, the review of the literature has illustrated there exists other perspectives (contextual understandings) that indeed contribute to business effectiveness and influence interaction and through this collaboration. Therefore, this study embraces all relevant data that can be significant to understanding the context.

The review of the literature on networks (Chapter 10) is also further organized into a three-part in chapter discussion, where part I focuses on the three traditional approaches for understanding the concept of networks in the business literature—*structural, relational and cultural approaches*. Part II focuses on deconstructing and exploring the social characteristics of networks bringing focus on individuals in

networks, networks as interactions, relationships, forms of social governance such as trust and power and knowledge in networks. Part III focuses on defining networks for this study and an overall cumulative sense-making process for understanding networks in this context, where the longitudinal nature of the network further influences the importance of context, interaction, relationships, interdependence and reciprocity.

The last literature reviewed is that of the individual and their interactions (Chapter 11). Here the chapter is also organized into a three-part in chapter discussion, where part I focuses on how we can better understand the individual in this context. Through a review of identity, perception, and sensemaking I arrive at a new conceptualization for understanding the individual through a focus on experience, needs and emotions, rather than the traditional focus on personality found in the extant literature. Part I also reviews the relationship between social cognition and perception, knowledge and learning (both at the individual and organizational levels). Part I concludes briefly exploring culture as part of the individual. Part II reviews the concept of interaction exploring intertwining, furthermore relationships through social capital, roles and the dynamic of trust and conflict in relationships and concludes with a discussion on communication and language. Part III provides four social process techniques for facilitating individuals with their intra- and inter- personal social dynamics—*perceptual readiness* (Bruner 1957), *sensemaking* (Weick 1979), *self-monitoring* (Caldwell & O'Reilly 1982 in Kilduff & Tsai 2009) and *social comparison theory* (Festinger 1954 in Kilduff & Tsai 2009).

Through the iterative process of reviewing the literature on culture and networks as well as the data collected there are some key aspects of individuals that are more prominent. One of these is the cognitive structures¹; including specific attention to interpretation and perception of phenomena. Another is the relational need and significance of such developments in exchanges/interactions, however, a more keen look into this from a business perspective. A third is knowledge and learning processes. And lastly how cultural manifestations assist or impede all these. The way in which we interpret and perceive our environment will affect how we socialize, who we trust and how we choose to learn from our environment. Cultural manifestations and their interpretations undoubtedly have an impact in how we accept and embrace opportunities for information exchange and knowledge creation.

Weick (1995:20) states that, “identities are constituted out of the process of interaction”, and the process of interaction in organizations has changed over time from a focus on necessity to also include a focus on interest. The increase in autonomy and the complexity in large multi-national knowledge networks allows for individuals to create their own paths for task completion and professional development. This freedom allows that interest also guides interaction. Therefore the diversity of interaction provides individuals with the opportunity to continuously redefine themselves and by extension their work. If identity is an outcome of interaction, then we can presume that how we perceive ourselves and our environment including interactions, how others perceive us and how we believe others perceive us has a great impact not only on our identity but also on interaction.

¹ Cognitive Structure can be defined as, “a system of interrelated beliefs, preferences, expectations, and values that a person uses to define problems and events” (Jones (1993:488).

Bruner (1957:132) states:

“The accessibility of categories I employ for identifying the objects of the world around me must not only reflect the environmental probabilities of objects that fit these categories, but also reflect the search requirements imposed by my needs, my ongoing activities, my defenses, etc. And for effective search behavior to occur, the pattern of perceptual readiness during search must be realistic: tempered by what one is likely to find in one’s perceptual world at the time and at the place as well as by what one seeks to find.”

This study sees the individual as drivers of activity—through their interactions. It is essential to understand the individual if they are to carry such a role in understanding the larger context of this study, which is to explore how to improve collaboration processes of multi-national knowledge networks. I could have chosen to base my understanding of individuals on assumptions or focused on personality; however, driven by iteration, I found it necessary to explore the individual and their interactions in a dynamic and longitudinal business context. Let me be clear this study is not a study of psychology but one of how individuals in interaction drive phenomena.

Moving on, Part IV (Chapter 12-13) combines the emergent data from Part II and the literature reviewed in Part III, revisiting the conceptual framework (Chapter 4) and further developing new theory for improving collaboration processes in intra-organizational multi-national knowledge networks.

Chapter 12 *Thematic and Theoretical Developments* develops a comprehensive analysis that a) further develops the most significant and relevant themes and concepts presented throughout this dissertation so as to b) clarify how to improve the management of intra-organizational multi-national knowledge (R&D) networks and how employees can improve on their collaboration processes. Similar to Part III this chapter is also organized into a cumulative three-part in chapter discussion where part I of Chapter 12 focuses on the three components identified as the most significant for collaboration processes. Here the discussions are substantiated by a combination literature and revealing empirical excerpts. Propositions are presented here. Part II examines and presents the components inter-relating concepts—*interaction, roles & purpose and relationships*. This part also exemplifies each of these interrelationships through the, ‘*what’s in it for me?*’ phenomenon, one of the key phenomena experienced through this study as it is a good way to illustrate the interrelationships stem from the autonomous nature of the context but can simultaneously negatively affect the need for inter-dependence. Part III of Chapter 12 provides a discussion of part I and II and concludes with suggestions for Grundfos. The discussion in part III aims at deliberating the implications and ramifications of this study for the improvement of collaboration and the management of R&D activities in a global setting. The discussion also aims to bring closure to the analysis by considering the practical nature of the findings presented in part I and II. The last section of part III *the suggestions*, are written in a cumulative and practical approach, where instead of presenting suggestions for each of the three components and their inter-related concepts, I present integrative suggestions focusing on five areas of practical interest for Grundfos based of course on the three components and their inter-related linking concepts. The five focal practical areas are: 1) creating common ground, 2) culture enacted through the individual and their interactions, 3) networks, 4) role clarification and 5) relationships.

Chapter 13 *the concluding Chapter*, focuses on revisiting the research questions, reviewing the methodological journey and discussing the limitations of this study and the future research directions.

This study makes three major contributions:

First, it presents a new understanding of culture in organizations as culture at the *micro-practical level*/focus where we understand culture through the individual and their interactions.

Second, it reveals a much needed focus on the individual and their interactions in business that is centered around the very same—individuals' unique contributions and the innovation that occurs through collaboration.

Third, it provides new directions for navigating complex, long-term focused networks where a clear emphasis on context over culture for a resolute focus on the roles and purposes of intra-organizational multi-national knowledge networks within complex organizations. This focus leads to revelations of the importance of relationships and the need for individuals in the networks to build relationships based on mutual interests. The data has shown the importance of trust in these relationships and how it enhances relational bonds. Growing an individual's network is a by-product of the work they do and the relationships they nurture; thus, placing emphasis on credibility and influence in network interactions.

This dissertation also contributes to the growing necessity to create an awareness for the dichotomy between the context. The way in which organizations understand culture, networks and individuals needs to change. There needs to be a shift from resource-thinking to relational and interaction thinking, what I would call a *micro-practical focus*, which is what is ultimately the primary 'currency' in these types of network structures now and for the future. These changes will release some of the tension in these networks providing much needed recognition of the context and the necessary tools for successful work task completion and the overall improvement of collaboration processes for intra-organizational, multi-national knowledge networks.

Organizations like Grundfos that have a business and structure that depend on people's ingenuity to create, have a need, more than most, to nurture individuals and provide ways for individuals to get the best out of their relationships since these facilitate the success of their work (compared to traditional organizational hierarchies where roles are pre-defined).

Key Words: Culture in Organizations, Intra- and Inter- personal dynamics, Individuals and their Interactions, Culture-in-Action, MNCs, knowledge networks, ideational perspectives on culture, co-created meaning, relationships, trust, intra-organizational networks, collaboration, perception, context, identity, interaction, organizational theory, culture, internationalization of R&D activities, knowledge management, learning and networks.

Danish Abstract

Denne Ph.d. afhandling undersøger intraorganisatoriske multinationale vidensnetværk i store virksomheder og bruger Grundfos som case virksomhed. Grundfos er en førende producent af pumpe-løsninger. Grundfos ønsker at være kendt for mere end pumper og de sætter fokus på innovation og bæredygtighed. De er stolte af deres historie og favner nutid og fremtid for at sikre organisationen en vækst på det multinationale plan.

Ph.d. undersøgelsens overordnede formål kan sammenfattes som forståelse og forbedring af, hvordan multinationale selskaber styrer deres globale R&D netværk og hvordan medarbejderne kan forbedre deres samarbejde samt forståelse af deres globale kolleger med det endelige mål at lægge grundlaget for at skabe og/eller forbedre tværkulturelle synergier i deres globale vidensnetværk R&D (forsknings og udviklings). Formålet med denne afhandling er at bidrage til viden inden for tre brede områder: 1) kultur i organisationer med særlig fokus på komplekse intraorganisatoriske multinationale vidensnetværk og 2) netværksforståelse, og 3) det enkelte individ og deres interaktioner i denne sammenhæng. Forskningsspørgsmålene udvikler sig fra den iterative proces. Der er tre niveauer af forsknings dybde: Forklarende, sonderende og reflektiv. **Hovedproblemformuleringen: Hvilke komponenter yder indflydelse på samarbejdsprocessen inden for International R&D?** Fokuserer på identifikation af miljø (forklarende). **Underspørgsmål 1: Hvordan interagerer de mest indflydelsesrige komponenter?** Fokuserer på identifikation af indbyrdes forhold mellem komponenter (sonderende). **Underspørgsmål 2: Hvad er komponenternes sammenfattede virkninger af samarbejde og efterfølgende resultater?** Fokuserer på identifikation af den bedste proces for indbyrdes samarbejde og dermed bedste resultater (refleksivt).

Dette studie anvender kvalitativ hermeneutik metodologi med fokus på henholdsvis Interpretivisme, Konstruktivisme, epistemologiske og ontologiske paradigmer. I overensstemmelse med disse metodiske valg og på grund af det tætte samarbejde med Grundfos, har denne undersøgelse fulgt en kombineret multiperspektiv tilgang af 1) Case Study approach ('casestudie'), 2) Grounded Theory approach ('begrundet teori') og 3) Action Research approach ('actionforskning') alle med henblik på at forblive tro mod de empiriske fænomener og give de bedste resultater for både den akademiske verden og erhvervslivets praksis.

Den hermeneutiske kvalitative karakter af denne undersøgelse er illustreret af designet, hvor undersøgelsen er organiseret i fire overordnede dele: Part I- *Setting the Scene* (kapitel 1-4), Part II- *Journey of Discovery* (kapitel 5-7), Part III- *Literature Reviews* (kapitel 8-11), og Part IV- *Identifying New Knowledge and Concluding Remarks* (kapitel 12-13). Derudover præsenterer litteraturanmeldelserne en kumulativ læringsproces ved opnåelsen af nye forståelser, løbende anvendelse af disse til de næste dele og kapitler.

Part I (kapitel 1-4) angiver scenen og omfatter henholdsvis kapitler med introduktion, metodologi, case præsentation og konceptuel begrebsramme.

Som en del af den metodiske rejse i denne undersøgelse, præsenterer Part II hver R&D enhed (DK, USA og KN) henholdsvis gennem kapitel 5, 6 og 7. Hvert kapitel organiserer data i tre til fire niveauer af temaer og undertemaer og afsluttes af praktiske grunde med et resumé. Disse overvejelser er behandlet i den samlede analyse af hvordan man kan forbedre samarbejdsprocesser for Grundfos' globale R&D netværk og analyseres ikke længere som enkelte enhedsanalyser.

Part III (kapitel 8-11) præsenterer en gennemgang af de tre vigtigste komponenter i samarbejdsprocesser for intraorganisatoriske multinationale (R&D) vidensnetværk. Disse er i denne undersøgelse identificeret som *—kultur, netværk og det enkelte individ og deres interaktioner*. Derudover gennemgår kapitlerne litteratur om internationalisering af R&D aktiviteter i multinationale organisationer.

Part IV (kapitel 12-13) kombinerer frembrydende data fra Part II og litteraturanmeldelserne i Part III, tilbageblik på konceptuel begrebsramme (kapitel 4) og yderligere udvikle ny teori for at forbedre samarbejdsprocesser i intraorganisatoriske multinationale vidensnetværk.

Denne undersøgelse gør tre store bidrag:

For det første, præsenteres en ny forståelse af kultur i organisationer som kultur på hvad jeg kalder den *mikro-praktisk niveau/fokus*, hvor vi forstå kultur gennem det enkelte individ og deres interaktioner.

For det andet, det afslører en tiltrængt fokus på det enkelt individ og deres interaktioner i erhvervslivet, der er centreret omkring selvsamme—enkeltpersons enestående bidrag og den innovation, som opstår gennem samarbejde.

For det tredje gives der nye retninger for at navigere komplekse og langsigtet fokuseret netværk hvor et klart fokus er på konteksten i stedet for kultur for en resolut fokus på roller og med henblik på intraorganisatoriske multinationale vidensnetværk i komplekse organisationer. Dette fokus fører til afsløringer af betydningen for relationer og behovet for enkeltpersoner i netværk til at opbygge relationer baseret på fælles interesser. Dataene har vist betydningen af *tillid* i disse relationer og hvordan det øger relationelle bånd. Væksten af en persons netværk er et biprodukt af det arbejde, de udfører og de relationer, de nære; således lægges vægt på *troværdighed (credibility)* og *indflydelse (influence)* i netværket interaktioner.

Denne afhandling bidrager også til den voksende nødvendighed for at skabe en bevidsthed for modsætningen mellem konteksten i intraorganisatoriske multinationale vidensnetværk og enkeltpersoner i selv konteksten. Den måde hvorpå organisationer forstår kultur, netværk og enkeltpersoner skal ændres. Der skal være et skift fra ressource-tænkning til relationelle og interaktion tænkning, hvad jeg ville kalde en *mikro-praktisk fokus*, hvilket er hvad der i sidste ende er den primære 'valuta' i disse typer af netværksstrukturer nu og i fremtiden. Disse ændringer vil frigive nogle spændinger i disse netværk, der så vil yde en tiltrængte anerkendelse af konteksten og de nødvendige værktøjer for vellykkede arbejdsopgave afslutning og den samlede forbedring af samarbejdsprocesser for intraorganisatoriske, multinationale vidensnetværk.

Organisationer som Grundfos, der har en forretning og struktur, der afhænger af folks opfindsomhed, de har brug for, mere end de fleste, at pleje de individer og gør det muligt for de enkeltpersoner at få det bedst ud af deres relationer siden disse muliggøre succes i deres arbejde (i forhold til traditionelle organisationshierarkier hvor roller/relationer er foruddefinerede).

Nøgleord: Kultur i organisationer, kultur-i-handling, multinationale selskaber, vidensnetværk, medskaber betydning, relationer, tillid, intraorganisatoriske netværk, samarbejde, perception, kontekst, identitet, interaktion, organisationsteori, kultur, internationalisering af R&D aktiviteter, forvaltning af viden, læring og netværk, kultur i virksomhederne, kultur i mellem mennesker, individ og deres interaktioner, intern og ekstern dynamik i interaktioner, organisationsteorier, Netværksrelationer.

Table of Contents

Acknowledgements.....	iv
Executive Summary.....	vi
Danish Abstract.....	xii
Table of Contents	xiii
PART I- SETTING THE SCENE	1
Chapter 1	3
1 Introduction – Setting the Scene.....	3
1.1 First impressions.....	4
1.2 Brief Case Company Introduction.....	5
1.3 Critical Points – <i>letting the data speak</i>	7
1.4 Introduction of Conceptual Framework	11
1.5 Research Questions	12
1.5.1 Definition of Terms	14
1.6 Limitations of the Study.....	14
1.6.1 Practical Aims and Ambitions	15
1.7 Organization and the outline of the Study	16
Chapter 2	19
2 Methodology	19
2.1 Positioning the Study.....	19
2.2 Philosophical Foundations of the Study	20
2.2.1 Ontological considerations	20
2.2.2 Epistemological considerations	21
2.2.3 Methodological Paradigm- concluding remarks & links to approaches.....	22
2.3 A Multi-Perspective Research Approach	23
2.3.1 Grounded Theory	24
2.3.2 Case Study	34
2.3.3 Sense-making of the Multi-Perspective Approach	37
2.3.4 Action Research	38
2.3.5 Research Approaches in Practice	43
2.4 Research Design & Procedures.....	52

2.4.1	Research Chronology.....	52
2.4.2	Research Activities.....	54
2.5	Data Collection- <i>“The What”</i>	55
2.5.1	Interviews	55
2.5.2	Participant Observation.....	62
2.5.3	Documents as sources of Data	64
2.6	Data Collection- <i>“The How”</i>	65
2.6.1	Coding.....	65
2.6.2	Memo Writing	67
2.6.3	Reflection.....	68
2.7	Ethical Implications & Considerations.....	68
2.7.1	The role(s) of the researcher & its effects.....	69
2.7.2	Data Protection.....	71
2.7.3	Validity in Qualitative Research.....	72
2.7.4	Boundaries and limitations.....	72
2.8	Concluding remarks	73
Chapter 3	.....	75
3	Case Presentation.....	75
3.1	Grundfos A/s- General Case Summary	75
3.1.1	Grundfos Values	79
3.1.2	Group Strategy 2009.....	79
3.1.3	Grundfos Future Ambitions – Innovation Intent	80
3.2	Grundfos R&D- General Summary.....	82
3.2.1	R&D Brief History.....	82
3.2.2	Grundfos Business Development- New Structure.....	84
3.2.3	Global R&D Focus	86
3.2.4	Global R&D- Main Strategic Elements.....	87
3.2.5	Global Program and Global Project Management	88
3.3	Grundfos R&D Unit – Denmark	90
3.3.1	Context & Culture.....	90
3.3.2	Globalization in R&D.....	90
3.3.3	Future R&D Now.....	91
3.3.4	Competence Networks	93

3.4	Grundfos R&D Unit Presentation- US.....	96
3.4.1	NAMREG D&E Organization	96
3.4.2	NAMREG D&E Network	97
3.5	Grundfos R&D Unit Presentation- China	98
3.5.1	Grundfos China	98
3.5.2	History of R&D China	100
3.5.3	Future Plans for R&D China	101
3.6	Case Commentary	102
Chapter 4	.....	103
4	The Conceptual Framework- <i>Grounding the data</i>	103
4.1	Culture in Organizations	103
4.2	Networks	105
4.3	Individuals and their Interactions.....	107
4.4	Knowledge	109
4.5	Summary.....	110
PART II- JOURNEY OF DISCOVERY	.....	111
Chapter 5	.....	113
5	Grundfos R&D Denmark- Identified Themes.....	113
5.1	Culture	113
5.1.1	Identifying Culture.....	114
5.1.2	Danish Culture— a Danish Perspectives.....	118
5.1.3	Chinese culture- Danish perspective	121
5.1.4	Grundfos Culture	122
5.1.5	R&D Culture	128
5.2	Globalization.....	128
5.2.1	Current Situation	129
5.2.2	Perspective on Globalization in Grundfos	130
5.2.3	Key Obstacles for Success.....	130
5.3	Networks	134
5.3.1	Understanding Networks.....	134
5.3.2	Networks are about Relationships	138
5.3.3	Networks are about Collaboration	139
5.3.4	Competence Networks	140

5.4	Individuals & their Interactions	143
5.4.1	Cognition	143
5.4.2	Individuals at Work- focus on needs	144
5.4.3	Importance of Building Relationships.....	145
5.5	Knowledge & Learning.....	145
5.5.1	Knowledge Development	146
5.5.2	Reverse Knowledge Sharing	147
5.6	Communication	147
5.6.1	Barriers	148
5.6.2	Physical Proximity aids in Clarification Opportunities.....	149
5.6.3	<i>Virtual Communication</i>	149
5.7	Summary of R&D Unit- Practical Considerations	151
6	Grundfos R&D US- Identified Themes	153
6.1	Culture	153
6.1.1	Perspective, Perceptions, Behavior and Interpretations.....	153
6.1.2	Acknowledging underlying assumptions as a judgment criteria	154
6.1.3	Diversity in Management	155
6.1.4	American Perspective on Creating Efficient Knowledge Networks.....	155
6.2	Building Network Relationships	156
6.2.1	Managerial Engagement.....	156
6.2.2	Building Networks Access-evolving from gatekeeper to network guide/conduit	157
6.2.3	Individuals- focus by association	157
6.2.4	Face2face Communication	158
6.2.5	Establishing Network Relationships & Creating Common Ground	158
6.3	Networks	159
6.3.1	Referrals & Sharing Can Only Take You So Far	159
6.3.2	Re-learning Collaboration Processes for a Global Context.....	159
6.3.3	Matching Our Processes to Our Goals.....	160
6.3.4	Knowledge Sharing; Changing Behaviors— <i>adapting</i>	160
6.3.5	Building Networks- <i>passing the torch</i>	161
6.4	Creating Common Ground.....	161
6.4.1	Diversity of Perspective can Enhance Understanding	162

6.4.2	Global Collaboration- <i>accepting change</i>	162
6.4.3	Global Collaboration- <i>setting the standard</i>	162
6.4.4	Global Collaboration- revelations for the journey ahead.....	163
6.5	Trust.....	163
6.5.1	Access, Trust & Knowledge.....	163
6.5.2	Trust, Sharing, Cultural Perceptions	164
6.5.3	Knowledge is Power.....	165
6.6	Global Ambitions	165
6.6.1	Organizational Change.....	166
6.6.2	Finding & Sustaining a Balance.....	166
6.6.3	Access to Information.....	167
6.6.4	High Hopes for Process Improvements	167
6.7	Global Collaboration.....	168
6.7.1	Current Status & Challenges.....	168
6.7.2	Individuals in Interaction	169
6.7.3	Understanding the Global Priority.....	171
6.8	Summary of R&D Unit: Practical Considerations.....	173
7	Grundfos R&D China- Identified Themes	175
7.1	Culture	175
7.1.1	Identifying Culture.....	176
7.1.2	Cultural Perspectives	180
7.1.3	Grundfos R&D China Culture.....	187
7.1.4	A Chinese Perspective on R&D in Grundfos	191
7.2	Networks	196
7.2.1	Establishing a Network from China	196
7.2.2	The Dichotomy of the Network Structures	199
7.3	Individuals and their Interactions.....	202
7.3.1	Social & Cognitive Aspects of Interaction.....	202
7.3.2	Knowledge & Learning.....	206
7.3.3	Employee Retention & Development.....	209
7.3.4	Understanding the Chinese Employment Market.....	214
7.4	Communication	215
7.4.1	Stakeholder Management.....	216

7.4.2	Using your Heart in Communication	216
7.4.3	Virtual Communication.....	217
7.4.4	Communication & Language	218
7.5	Leadership & Management	220
7.5.1	Managing R&D China- The Grundfos way	220
7.5.2	Decision-making and the Invisible Leader	221
7.5.3	Management as Role Models	221
7.6	Creating Common Ground.....	222
7.6.1	Engineer Education in China & Denmark	222
7.6.2	Facilitating Integration through Themes.....	222
7.6.3	Global Management Tours.....	223
7.6.4	Multi-tasking in New Organizations	223
7.6.5	R&D China Competencies—Misrepresented in Denmark.....	223
7.7	Summary of R&D Unit- Practical Considerations	225
PART III- LITERATURE REVIEWS		227
CHAPTER 8- Literature Review—Internationalization of R&D Activities.....		229
8	R&D Focus	229
8.1	What is R&D?.....	229
8.2	Brief Review of R&D	230
8.3	R&D units and Headquarter Relations	235
8.4	What are the Key Aspects/Fundamentals of R&D	235
CHAPTER 9- Literature Review- Culture		237
9	Introduction- Understanding Culture.....	237
PART ONE- UNDERSTANDING CULTURE		239
9.1	Origins of the Concept of Culture.....	239
9.2	Reviewing the Three Main Areas of Study & their Influence on the Concept of Culture.....	242
9.3	Shifting Focus- Culture in Organizations, Influence in Organizational Life	245
PART TWO- ORGANIZATIONAL CULTURE.....		246
9.4	Origins of organizational culture	246
9.5	Understanding the Underpinnings of Organizational Culture.....	247
9.5.1	The Context of Organizations & its Impact on Organizational Culture	248
9.5.2	Business & Organization Theory Plagued by Polarities	253

9.6	Martin's 3 Perspective of Culture in Organizations.....	253
9.6.1	Critical Evaluation of Three Perspective Theory.....	254
9.6.2	Critique- Methodological Considerations.....	256
9.6.3	Concluding Points	257
9.7	Reviewing Organizational culture theories – Martin's three perspectives	257
9.7.1	The Integration Perspective	258
9.7.2	Differentiation Perspective.....	259
9.7.3	Fragmentation Perspective	261
	PART THREE- INFLUENCERS OF CULTURE & THEIR SIGNIFICANCE IN BUSINESS	264
9.8	Recap of Chapter- (Identifying why culture is significant to business)	264
9.9	Defining Culture & its Implications for this study.....	265
9.10	Influence of Culture in Business	266
9.10.1	Globalization- the Greater External Environmental Context	266
9.10.2	Forms of Structure & Networks- the Internal Organizational Context	267
9.10.3	Communication & Language- the Internal Organizational Context	267
9.10.4	Learning & Knowledge- the Internal Organizational Context	269
9.10.5	Meaning Creation & Understanding-Cognitive & Relational Context.....	269
9.11	Chapter Summary.....	270
	CHAPTER 10- Literature Review—Networks.....	273
10	Introduction.....	273
	PART ONE- THREE APPROACHES TO CONCEPTUALIZING NETWORKS.....	274
10.1	The Structural Approach.....	274
10.2	The Relational Approach	277
10.3	The Cultural Approach.....	280
	PART TWO- DECONSTRUCTING & EXPLORING SOCIAL CHARACTERISTICS OF NETWORKS	284
10.4	Individuals in Networks	285
10.5	Networks as Interactions.....	285
10.6	Relationships	287
10.7	Forms of Social Governance/Control in Networks	289
10.7.1	Trust.....	289
10.7.2	Power.....	290
10.8	Knowledge in Networks.....	291
	PART THREE- DEFINING NETWORKS & SENSE-MAKING FOR THIS STUDY	294

10.9	Making Sense of Networks	294
10.9.1	Defining Networks	296
10.9.2	Knowledge Networks in Context	297
10.10	Chapter Summary	302
CHAPTER 11- Literature Review- Individuals and Their Interactions		305
11	Introduction	305
PART ONE- UNDERSTANDING THE INDIVIDUAL		306
11.1	Identity	307
11.2	Perception	309
11.2.1	Experience	315
11.2.2	Needs	316
11.2.3	Emotions	316
11.3	Social Cognition & Perception	318
11.4	Knowledge & Learning	321
11.4.1	Defining Knowledge & Learning through the Individual	322
11.4.2	Learning & Knowledge in the Organizational Context: Connecting the Individual to Interaction & the Organization	325
11.5	Culture as part of the Individual	329
PART TWO- INTERACTION		331
11.6	Relationships	333
11.6.1	Social Capital	335
11.6.2	Roles	337
11.6.3	Trust & Conflict	338
11.7	Communication & Language	339
PART THREE- SOCIAL PROCESS TECHNIQUES		343
11.8	Perceptual Readiness	344
11.9	Sensemaking	347
11.10	Self-monitoring	351
11.11	Social Comparison Theory	353
11.12	Chapter Summary	354
Part IV- IDENTIFYING NEW KNOWLEDGE AND CONCLUDING REMARKS		357
CHAPTER 12-		359
12	Introduction- Thematic & Theoretical Development	359

PART ONE- THREE MOST SIGNIFICANT COMPONENTS TOWARDS IMPROVING COLLABORATION	359
12.1 Three Main Components of Collaboration in Networks	360
12.1.1 Component # 1 Culture	360
12.1.2 Component # 2 Networks.....	360
12.1.3 Component # 3 Individuals and their Interactions	360
12.2 Understanding Culture for Improving Global Collaboration	361
12.2.1 The Role of the Individual in Culture	365
12.2.2 The Interplay Between Needs (Individuals) & Relationship.....	367
12.2.3 Dynamics of culture enacted through interaction	368
12.2.4 Section Summary- Culture.....	371
12.3 Understanding Networks for Improving Global Collaboration	372
12.3.1 Achieving Task Fulfillment (purpose)	373
12.3.2 Gain access to information & knowledge.....	380
12.3.3 Develop relationships.....	383
12.3.4 Participate in network activities.....	386
12.3.5 Section Summary- Networks	387
12.4 Understanding Individuals for Improving Global Collaboration.....	387
12.4.1 Simplifying how we define the Individual for complex business networks	388
12.4.2 Identifying Two Key Areas for Understanding Individuals in Business.....	391
12.4.3 Section Summary- Individuals and their Interactions	395
12.5 Context & Its Relevancy towards Improving Collaboration	395
12.5.1 Understanding the Context of Global R&D Networks.....	396
12.5.2 Understanding the Grundfos Specific Context	398
12.5.3 Section Summary.....	402
PART TWO-AN EXAMINATION OF THE COMPONENTS' INTER-RELATIONSHIPS	402
12.6 Interaction: Culture & Individuals	404
12.7 Roles & Purpose: Culture & Networks	406
12.8 Relationships: Networks & Individuals	407
PART THREE- IMPLICATIONS, RAMIFICATIONS AND PRACTICAL APPLICATIONS	411
12.9 Discussion- Context, Complexity, Culture & Cognition	411
12.10 Focus on the Future.....	413
12.11 Suggestions.....	416

12.11.1	Creating Common Ground.....	416
12.11.2	Culture enacted through Individuals and their Interactions	419
12.11.3	Networks	421
12.11.4	Roles & Purpose.....	423
12.11.5	Relationships	425
Chapter 13-	.....	429
13	Conclusion	429
13.1	Revisiting Research Questions.....	429
13.1.1	The Primary Research Question: Which components are influential to the collaborative process within International R&D Activities?	429
13.1.2	The Sub-question 1: How do the most influential components interact?.....	438
13.1.3	The Sub-question 2: What are the combined effects of the components on collaboration and outcomes subsequently?	440
13.2	The Methodological Journey	442
13.2.1	<i>Case Study approach</i>	443
13.2.2	<i>Grounded Theory (GT) approach</i>	444
13.2.3	<i>Action Research approach</i>	444
13.3	Limitations & Future Research Directions.....	444
References	.....	448
1	Appendix: Summary list of Internationalization of Grundfos A/s	486
2	Appendix: Data Collected- Grundfos Denmark R&D Interviews	487
3	Appendix: Data Collected- Grundfos US R&D Interviews.....	488
4	Appendix: Data Collected- Grundfos China R&D Interviews	489
5	Appendix : Data Collected- Documents: Grundfos— General Company Information 490	
6	Appendix: Data Collected- Documents: Grundfos—Company Reports & Magazine Articles.....	491
7	Appendix: Data Collected- Documents: Grundfos—R&D Specific Documents	492
8	Appendix: Data Collected- Documents: Grundfos R&D—Future R&D Now Event Documents	493
9	Appendix: Data Collected- Documents: Grundfos R&D—Secondary Data Sources & in the Media	494
10	Appendix: Data Collected-Observations: Grundfos R&D	495

Figure 1- Interconnectivity of Main Observations.....	12
Figure 2- Connection between the research questions towards a positive effect on business	13
Figure 3- Project design	18
Figure 4- Spiral of Action Research Cycles.....	39
Figure 5- Connecting Forms of Reflection to the Iterative Cycle	43
Figure 6- Review of Defining Protocols and Type of Research Approach	49
Figure 7- Grundfos Group Organizational Structure	77
Figure 8- Grundfos Group Six Business Regions/Segments.....	78
Figure 9- Grundfos Value Wheel	79
Figure 10- Innovation Intent Motto	81
Figure 11- Grundfos R&D Costs 2008-2012.....	83
Figure 12- Grundfos R&D Configuration 2005-2008	84
Figure 13- Restructured R&D Process	85
Figure 14- Grundfos R&D Process through Research & Technology and Development & Engineering.....	86
Figure 15- Grundfos R&D Alignment with Product Segments	87
Figure 16- The (Aspired) Grundfos Global R&D Structure.....	87
Figure 17- Five Challenges from Future R&D Now Project	92
Figure 18- Global Technical Competence Network.....	94
Figure 19- Global Competence Map.....	94
Figure 20- Humphrey Lau's Perspective of the Development of the Chinese Market.....	99
Figure 21- 3 Point Model for Understanding Network-Based Organizations	103
Figure 22- Meaning Creating Process from a Cultural Perspective.....	108
Figure 23- Six Primary Identified Themes for R&D Denmark	113
Figure 24- R&D DK: Culture theme- presentation of sub-themes & their underlying topics.....	114
Figure 25- R&D DK: Globalization theme- presentation of sub-themes & their underlying topics	129
Figure 26- R&D DK: Networks theme- presentation of sub-themes & their underlying topics	134
Figure 27- R&D DK: Individuals and their Interactions theme- presentation of sub-themes & their underlying topics.....	143
Figure 28- R&D DK: Knowledge theme- presentation of sub-themes & their underlying topics	146
Figure 29- R&D DK: Communication theme- presentation of sub-themes & their underlying topics	148
Figure 30- Seven Primary Identified Themes for R&D US	153
Figure 31- R&D US: Culture theme- presentation of sub-themes & their underlying topics.....	153
Figure 32- R&D US: Building Network Relationships - presentation of sub-themes & their underlying topics	156
Figure 33- R&D US: Networks - presentation of sub-themes & their underlying topics.....	159
Figure 34- R&D US: Creating Common Ground - presentation of sub-themes & their underlying topics	162

Figure 35- R&D US: Trust - presentation of sub-themes & their underlying topics	163
Figure 36- R&D US: Global Ambitions - presentation of sub-themes & their underlying topics	165
Figure 37- R&D US: Global Collaboration - presentation of sub-themes & their underlying topics	168
Figure 38- Six Primary Identified Themes for R&D China	175
Figure 39- R&D China: Culture theme - presentation of sub-themes & their underlying topics	176
Figure 40- R&D China: Networks theme - presentation of sub-themes & their underlying topics	196
Figure 41- R&D China: Individuals and their Interactions theme - presentation of sub-themes & their underlying topics	202
Figure 42- R&D China: Communication theme - presentation of sub-themes & their underlying topics	216
Figure 43- R&D China: Leadership & Management theme - presentation of sub-themes & their underlying topics	220
Figure 44- R&D China: Creating Common Ground theme - presentation of sub-themes & their underlying topics	222
Figure 45- Underlying Cultural Assumptions.....	244
Figure 46- Multiple Culture Perspectives	252
Figure 47- Martin's Three Theoretical Perspectives	254
Figure 48- Illustration of the Complexity of Cultural Tiles.....	263
Figure 49- Significance of culture in Business understood through individuals and their interactions.....	264
Figure 50- "Football"- Language links to culture and communication.....	268
Figure 51- Three Approaches to High-Performance Leadership in Knowledge-Based Organizations.....	301
Figure 52- Bruner's Model of Perception	310
Figure 53- Framework for emotional competencies	317
Figure 54- Overview of Individuals in Network Literature (focus on the individual in interaction)	334
Figure 55- Bruner's Perception Model	345
Figure 56- 3 Point Model for Understanding Network-Based Organizations	360
Figure 57- Inter-relational aspects of Collaboration	403
Figure 58- Revisiting the Conceptual Framework with New Found Knowledge & Understanding	437
Figure 59- Inter-relational aspects of Collaboration for Grundfos R&D Network	438

Table 1- Research Questions	13
Table 2- Critique and Pragmatic Considerations of GT and my reflections of these	28
Table 3- Top Ten Action Research Characteristics	41
Table 4- Overview of the Three Research Approaches in this Study	45
Table 5- Research Chronology showing significant activities for the PhD journey	53
Table 6- R&D units used in this Study & Relevant Methodological Information	54
Table 7- Example of focal areas used for Interviews & possible questions	57
Table 8- Gans's (1968) Classifications of Participant Observer Roles	63
Table 9- Grundfos' Mission.....	75
Table 10- Grundfos' Vision	76
Table 11- The R&D Vision	88
Table 12- Five Principle Trends for Organizing International R&D.....	233
Table 13- Five ideal forms of international R&D organization	234
Table 14- Overview of Contributing Definitions of Culture Based on Three Areas of Study	241
Table 15- Underlying Difference of Perspective.....	255
Table 16 Examples of Action & Interaction based on the Four aspects of interaction (UPPSALA).....	279
Table 17- Overview of Three Approaches to Networks in Business.....	283
Table 18- Common Relational Bonds found in Business Networks	288
Table 19- Types of Network Boundaries	299
Table 20- Seven Propositions of Perception by Bruner (1957)	312
Table 21- Examples of personality traits that promote positive interaction	318
Table 22- Kolb's Experiential Learning theory propositions.....	323
Table 23- Understandings of Knowledge and Learning.....	324
Table 24- Four Aspects of Intertwining & Examples in Network Context	332
Table 25- Gudykunst's Eight Assumptions about Communication	340
Table 26- Framework for understanding Third-Party Sensemaking	350
Table 27- Suggestions for Grundfos R&D Network	416
Table 28- Review of Proposition 1 & 2 Regarding Culture's Role in Intra-organizational multi-national knowledge networks	430
Table 29- Review of Proposition 3- 6 Regarding Networks' Role in improving collaboration	433
Table 30- Review of Proposition 7 Regarding how to understand Individuals in complex knowledge networks	435
Table 31- Summary of Key Contributions, Academic and Practical Implications.....	445

PART I- SETTING THE SCENE

Chapter 1

1 Introduction – Setting the Scene

“The globalization of business is a reality that is redefining how people work together” (Chao and Moon, 2005: 1128).

In its purest sense the word business means the exchange of monetary value for products provided and/or services rendered. Regarding these exchanges history has taught us two very important points about how business functions, and that is that 1) economies are driven by the pull and push of supply and demand existing in the market and that 2) businesses thrive on intensifying the focus and improving on their core competencies, i.e., what they are best at either producing or naturally have access to in their given market. While these are still true today, the present knowledge economy continues to impress upon us the importance of people as drivers of business; none of the aforementioned situations would be possible without people. Moreover, the importance of human connections becomes even greater when considering global business and how it is redefining how we work together.

Globalization together with the aid of continued technological advancements over time has evolved most of us to a place of hyper connectivity; MNC's are more connected than ever before, however, just because we are able to communicate instantly does not necessarily ease communication. Global business places an emphasis on the need for collaboration across a complex environment where distance, time and culture influence how individuals understand one another and therein, are able to work together.

The complexity of developing a successful global business rests primarily on maintaining a viable and up-to-date assessment of multiple interests for both the individual and overall market portfolios, making the right decisions regarding the basics, such as knowing when and how to internationalize and last but certainly not least is making sure that the organization's human capital is always prepared to tackle the complexities in their everyday work. For it is this last point that has become, in my understanding the most important yet the most taken for granted asset a global organization has for achieving and growing a sustainable business. It is the individuals and their interactions that interpret and further develop overall organizational strategies into implementable action plans and daily work tasks.

MNC's have acknowledged the need for change and have implemented flatter organization structures such as the matrix and network organization styles, which aim to create synergies in communication and sharing of know-how. However, these changes have created a greater emphasis on the role of individuals and their interactions; and this revelation places us right in the center of the current conundrum MNC's face—*how to tackle the dichotomy between autonomy and inter-dependence in intra-organizational multi-national knowledge networks*.

The organization has a need to focus on improving the structures and further developing the individuals; as these structure, the networks that connect individuals has spawned the need for employees to adapt and evolve into knowledge workers. Management also needs to refocus their initiatives on how to improve interaction/exchanges amongst network participants so that the information being transmitted and the knowledge being shared across these 'webs of employees' will facilitate the best collaboration across the various cultures and contexts, creating ease in communication and a better working environment. Holden

(2002:43) best articulates this concept when he writes, “networking is in fact a cross-cultural knowledge-sharing activity and is, as such, also a form of cross-cultural negotiation, in which protagonists strive to agree on (a) who is going to share with whom which mutually held resources and (b) the degree of access to those resources and degree of compensation or form of consideration for the privilege of obtaining that access”. It is this focus on individuals and their interactions in intra-organizational multi-national knowledge networks that should become a priority for MNC’s working in a global context; improving how individuals collaborate is essential for improving the business.

The case presented in this study focuses on Grundfos, particularly their Research and Development (R&D), which is also referred to herein as Grundfos Global R&D Network. By specifically focusing on the R&D activities of MNC’s, like Grundfos, it is the aim that this context with its extreme focus on networks, on intangible information and knowledge will lend for an insightful study environment that can shed light on improving collaboration across intra-organizational multi-national knowledge networks.

Traditionally MNC’s have maintained their R&D units centralized at headquarters. This was mainly due to both need and risk; the risk of having knowledge copied/stolen was too high, internationalizing sales and production facilities was enough. There are two primary reasons that have driven MNC’s to internationalize their R&D activities, creating global competence specific centers: 1) global competition, and 2) being close to relevant markets. Proximity to the local market has given sales and marketing teams the essential knowledge to anticipate the needs of the local market, however, it is necessary to have engineers in the local markets where they can given their expert knowledge also identify needs before anyone else can. In addition, R&D units can also set up local external networks where they can gain insights from local institutions such as universities; overall, a presence in local markets provides the organization the opportunity of being able to see the world through the eyes of the specific society.

The remainder of this Chapter builds on this introduction, walking the reader through my first impressions of Grundfos, a brief introduction to Grundfos, emphasis on critical data points, and an introduction to the conceptual framework. This chapter concludes by presenting the research questions as well as the organization and outline of the study.

1.1 First impressions

Snap Shot—the starting point

Grundfos is at a crossroads identifying the best way to internationalize their R&D activities and developing a Global R&D Network. In May 2009 the official kick off of my PhD study started with a meeting with Grundfos in Bjerringbro, Denmark. At this meeting the following points were perceived as adding to the complexity they were facing:

- Culture
- High Change environment
- Network based organization
- Strong Grundfos Developmental Process



- Collaborating globally
- Push/pull (technology vs. market driven)
- Knowledge sharing/management
- Networks

An Overarching Picture

Each of the above points came out of the initial discussions with management when reviewing their current situation. Here I summarize these points providing an overarching synthesis of these discussions to create an initial holistic picture.

Grundfos is in the midst of a transition, with highly global ambitions. Through the internationalizing of their R&D activities and further developing of Global R&D Network, Grundfos aims at developing competence centers in their local markets, being able to meet preexisting market demands and develop sustainable solutions due to this close proximity. Secondly, Grundfos aims at reaping additional rewards by being able to adapt local innovation for global markets.

Strategically, Grundfos aspires to, "...develop an organization where we are working together worldwide in a global human web of relations and with a shared working culture- as if we were sitting under the same roof" (Grundfos, Strategic Objective). Because of the influence of globalization, along with their drive for global reach, it is necessary to consider the effect of culture on the business. There is also a strong focus on innovation that originates from the founder, Poul Due Jensen, however since its beginnings in a farmhouse the company has become very large and thus complex. Grundfos operates in a total of 82 companies in 45 countries.

This is indeed the challenge for global businesses today, moving from facilitating interaction and communication across time, distance and culture. This type of context sets the individual and their interactions center stage. That is perhaps why Grundfos is characterized by an environment of seemingly constant change where meetings and discussions are essential for work progress. The environment for Grundfos R&D is also influenced by the push and pull of technology vs. market perspectives, a focus on culture and how it should be understood and used and how to tap into the synergies of the Global R&D Network (for the purpose of this study will focus only on three R&D units in Denmark, the US and China). This environment also places an emphasis on networks as well, considering the effectiveness of network structures, how individuals share information, expertise across the distance, time and culture.

1.2 Brief Case Company Introduction

The case company, Grundfos, presents several important aspects of MNC growth and transition in a modern economy, e.g., high change environment, creating a competitive advantage through differentiation, culture, the focus on people and the management and use of knowledge as well as structures that simplify complexity just to name a few. In the context of MNC business it is important that we come to terms with how MNC will be defined in this study. According to Bartlett and Goshal (2000:2) an MNC is a firm that, "actively manage those operations and regard those operations as integral parts of the company both strategically and organizationally." Bartlett and Goshal (2000) also state that being, "Engaged in the active management of their offshore assets" is essential. Using Bartlett and Goshal's

definition I will in this case study define Grundfos as multinational corporation (MNC). It is after all Grundfos' strategic focus is to grow through positioning themselves with two prominent high ambitions of 1) sustainability and 2) innovation, which make them stand out from the competition.

Beginnings

Grundfos wants to be known for more than pumps. From its beginnings, founder Poul Due Jensen, aspired through 'advanced technology and productivity combined with social responsibility and sustainability', to provide access to water for people after World War II. It was in this mindset of helping mankind through a tumultuous period in history that Grundfos established its roots, providing the foundation for the Grundfos of today, this history is indicative of the values presently used today; values such as sustainability, focus on the individual, global thinking, open and trustworthy, leadership, partnership, responsibility and independence. With regards to internationalization for Grundfos please refer to appendix 1 for a list of these events. For a complete presentation of Grundfos please refer to Chapter 3.

Grundfos- An R&D Focus

To understand where we are and where we would like to go it is always a good starting point to take a reflective and unbiased look into the past. Up until 1999 Grundfos had performed all its R&D activities in-house in Denmark. In 1999, the first step towards the internationalization of Grundfos R&D started with India. Grundfos bought a local Indian software company in New Delhi, in order to support its R&D activities and to look after the development of embedded pump software and PC software. The main motives behind this move were the potential cost savings and availability of qualified IT personnel in India. Despite the initial problems, the current R&D unit in New Delhi is running smoothly with twenty employees.

At the same time Grundfos acquired a Finnish pump manufacturing company and this company already had ten employees working in its R&D unit. This Finnish company still operates as an independent unit and this R&D unit is primarily being used for its local needs. However, Finnish R&D unit does exchange knowledge with Grundfos R&D unit in Denmark. As a next step, in 2001 Grundfos established an R&D unit in Hungary, situated at Grundfos main motor production facility; choosing Hungary for its R&D unit has strategic importance. The main motivation behind this move was to provide the knowledge assistance for the Hungarian production unit to adjust and customize different products. Since 2006, this R&D unit has been playing a more strategic role in Motor R&D and has been is a highly significant source of knowledge within this field. The internationalization of Grundfos R&D activities gathered momentum in 2006 with the establishment of local development centers in the USA and China. The main part of the Grundfos product development still takes place in Denmark.

In 2008 Grundfos implemented restructurings around their product platforms. This had an automatic effect on how R&D would collaborate through the product development process. A focus on efficiencies and removing overlapping tasks was the primary ambition. Grundfos R&D has been a pioneer in internationalizing Grundfos. It has done so because Grundfos has been founded on setting technological innovation as one of its highest priorities.

Today and the Future

The Grundfos of today continues to build off of its foundations joining together highly competent manufacturing skills and ambitious business strategy for the future with a keen focus on innovation and technology; there is a constant thirst for value creation, not just profit. Responsibility is incredibly important to Grundfos; thought is given to how to evolve the business while improving standards of living for people all over the world. Contemplating futuristic scenarios and the legacy Grundfos leaves to the world, it would be one of thriving and developing a sustainable business through preemptive insights into the current and future needs of people by creating value through technological innovations. Grundfos acknowledges that they will not beat huge competitors such as Siemens and GE; and that is one of the reasons for doing things differently. They do not want to grow for the sake of growing, as is states in the Grundfos book *More Than Pumps*, “High profitability is not an objective in itself, but a means to achieve continued growth of the [Grundfos] Group” (Grundfos book: *More than Pumps*). Innovation with a customer and market focus is their driving motivation. There are several issues facing Grundfos as it is on the verge of deciding if it can become what they call ‘truly global’ or if it is destined to be a Danish company working abroad.

1.3 Critical Points – *letting the data speak*

The study of R&D activities of large multinational organizations is a complex context to embark on researching; there are many avenues that can be explored, however, I attempt to simplify it based on the primary observations; letting the data guide the research. R&D is essentially bringing ideas to life. Ideas originate in the minds of individuals. Ideas are generated based on the given context that individuals find themselves in, both independent and dependent of one another. These contextual underpinnings are filled with percepts, assumptions and attributions of causal relationships that create behaviors. Organizations that aspire to have a Global R&D configuration need to learn to adapt to this complex environment. There is a need to understand when R&D units (and the individual that make up these units) need more autonomy and when they need re-centralization to meet overall global goals. The focus in the literature both R&D-related and management- and business- related has focused on macro constructs, I however, see an advantage in exploring micro ones; looking deeper under the surface, where no one seems to have time or an interest to explore the nuances of those very individuals that drive, impede and create R&D.

Times have changed in how organizations internationalize their R&D activities, but have both management and knowledge workers understood what they need to do in order to become better at understanding the new situations they find themselves in? I do not believe that neither organizations nor individuals have understood the great changes that have happened to the internationalization of R&D activities and that continue to occur to this day; changes not just specific to R&D but also about how we understand the dynamic nature of business in general. It is in understanding these individuals better, and providing both organizations and them with tools to be better equipped to handle their context that, I believe will improve collaboration processes, and in turn international R&D management in the years to come.

This section will focus on the key themes based on the preliminary observations at Grundfos. This section is aimed at familiarizing the reader by introducing a narrative where the empirical world speaks and begins to paint a picture, delineating key components and themes that will be part of the focal areas of this study.

My journey begins here.

Grundfos R&D.

Time & Place- Denmark 2009

Driving through Bjerringbro you cannot help but realize how big Grundfos is, especially compared to the city. You wonder what came first—the city or Grundfos. Walking through the city center and observing the city life, you soon come to realize that Bjerringbro is Grundfos. Everyone you meet has a connection to it, some more than others, but it is an emphatically real and present symbiosis between the city and the company. You get a sense of being in a kingdom only juxtaposed by modern times, the kind that you read about in medieval tales of long ago, where you imagine the castle off in the distance perched high on a hillside.

I was granted access to the castle; inside the goliath, the matriarch, the kingdom of Grundfos.

Officially, I was dubbed an 'external employee'; I had an access card, desk area and was formally introduced and welcomed. My role while at Grundfos vacillated from PhD student, researcher, observer, participant, consultant/advisor and teacher all depending on the context.

Grundfos is a city within a city. There are many buildings and factories spread of a large expanse; so much so that it pays to drive your car or ride your bike to get from one building to another. Grundfos R&D is housed in the Business Services (BD) building that is home to over 400 knowledge workers. They are mostly Danish, sometimes, you get to see a colleague from another R&D Unit, but for the most part, the workforce in Denmark is primarily Danish. I wonder where all the colleagues that visit are? I wonder how often they get to share ideas, thoughts and experiences face-to-face. I wonder about working processes and how they achieve inter-unit collaboration? From my initial observations there does not seem to be much face-to-face interaction between colleagues in R&D DK with visiting colleagues from R&D US and R&D China. Later the data shows the 'newness' of this Global R&D Network in how project managers and employees realize the importance of meeting face-to-face to learn and share.

During my time in Grundfos I observed a paradoxically simultaneous sense of urgent and static energies. The divergence between old and new, between keeping a hold on the past and moving on, of becoming a global leader with optimized Global inter-unit collaboration—this is the opposing polarities of energy that run through Grundfos. This period of change is filled with unknowns, nothing is certain about taking the first steps when there are no clear paths to know right from wrong. But it is in the spirit of discovery that Grundfos embarks with on this journey, is it with determination, with hope and high ambitions in a solid foundation, built not just on business, but on innovation, people, society and the future.

Over the course of my time in Grundfos I observed several different and poignant phenomena that I believe will have bearing on how study will develop.

Perception of culture and subsequent usage of culture in practice

Culture in Grundfos as in many organizations is a multi-faceted concept and that is interesting in its own right. However, sadly culture takes on the general status quo position of cross-cultural management found in the most managerial and business books, that of managing culture through focusing on dimensions. One thing I learnt as a kid that applies here is that you can't fit a square peg in a round hole. People are not as they say in Danish, 'firkantet' (people are not square). Danes can be individualistically as well as collectively

mind, Americans can be extroverted and reserved and Chinese can be goal-and relationship-oriented. People are complex and geographic boundaries is a dimensions no longer apply reeducation of the organizations. People and from these self-imposed chains. And they know it too, just as the excerpt above focuses on relations and trust rather than cultural traits, people's stories and their discussions are naturally counter-intuitive to categorical explanations, because they do not work; the context has changed!

"We don't manage culture. I think that a lot of has to do with building trust with each other." (DK010)

working across cultural and complex environment. Cultural but are still used. We need a dynamic, flexibility of culture in organizations need to be freed

Globalization

Globalization is a relatively new concept to Grundfos. Yes, they have internationalized for many years now. But the kingdom of Bjerringbro was still sovereign. Things have changed and globalization is not just about expanding outside of Denmark, it entails working together in a more intimate way than ever before with others than do not truly understand Grundfos entirely; to truly understand that you need to be part of it; physically experiencing it. As the saying goes, 'you gotta see it, to believe it', and global colleagues cannot fully understand what Grundfos is until they see it, and experience it on their own. It takes many more times than one visit to Bjerringbro to truly begin to understand it.

Danish colleagues have mixed opinions about globalization. Some are truly excited, while others not as much. Some fear for their jobs, and some find it so difficult to work globally that they would rather not work on global projects. Global collaboration, misconstrued perceptions, unfulfilled expectations, language and overall communication issues, basic things such as taking consideration for time differences and having the right technology in order to communicate impede the work processes and frustrate the people trying to get work done. Personal agendas (what's in it for me? phenomenon) that are mismatched with project, functional, global R&D and overall organizational agendas also destroys any attempt at working together and maximizing on growing competitive advantages through global collaboration.

*I think in the beginning when you are in Denmark you think that globalization is so easy, let's just do it. **The problem is that a lot of people have to do a lot of things to make this happen. And those are the things that you cannot see anywhere...**Even though you have maybe spent a lot of time on helping people at another place.*

***Globalization it is not for free.** Because that is at least when you hear some top managers in Denmark talk, I think that they think it is a free lunch. And it is not.*

*There's a lot of time and resources. **And it really takes a lot to make it work.** (C028)*

The right fit for internationalization of Grundfos R&D activities

Part of the dilemma with globalization is the need to find, identify and articulate the right fit for internationalization of R&D activities that fits Grundfos. There are no easy solutions when it comes to this and cookie-cutter, text-book models are not going to fit Grundfos. This is an uncomfortable journey both management and employees are taking together; this is the cause for so much frustration. But it should be

said that Grundfos is embarking on new terrain and the paths are not clearly defined, it is a learning and change process and these are never pleasant. Through the course of my own journey alongside Grundfos I have some ideas that will be developed in this study of what the best fit is for Grundfos Global R&D.

Networks & Importance of Building Relationships

Grundfos has realized that networks have taken over the business of R&D. People drive networks, networks are only structures that facilitate the interaction and exchanges between people. In an environment like that of Grundfos R&D where things need to happen quickly, individuals use their network contacts and relationships as short cuts for getting things done. This is quite complex phenomena, on the one side you have an organization that wants employees to develop their networks, to be 'self-lead' but on the other hand these very networks can undermine the formal organizational structures. This creates issues of lobbying for influence and where the myopic concentration on power play and politics can remove focus from the very collaboration and unification of global and regional ambitions. Balance is necessary; a refocusing and prioritization that will come from simply put: 1) the identification of the configuration of Grundfos Global R&D and 2) empowerment of knowledge workers.

"...it is really important that you establish these networks of people. So you know who you need to go to make things happen or ...get a piece of information. So even from day one when I started here, along with the help of two expats (from Denmark), establishing these networks. **Or I would call them relationships** basically, with individuals or some cases small work groups to help facilitate stuff that we need to get done". USA004

Not only are network configurations necessary for the internationalization of R&D activities but Grundfos R&D is very much about networks and self-sufficiency. New employees and global colleagues need to be explicitly aware of the need to be able to network. But a keen point of observation made clear by the excerpt above is that it is not just networks but the relationships in these networks that are essential.

Language and Communication- cultural and inter-personal factors

Communication is a complicated endeavor with many nuances to consider; there are cultural and cognitive considerations. As exemplified by the excerpt to the left, people's underlying assumptions, how they perceive their environment and others, their moods and their needs also play a role in what they get out of their contexts. I believe that through a greater awareness of intra- and inter-personal dynamics and the use of social process techniques individuals can be better equipped to interact effectively.

"I believe that it is exciting to work with colleagues from all over the world. Many times challenging but when it works it is really great. I believe that many times they challenge us in our perspectives. I hope that in the future we will be better to use one another around the world." (FRD002)

MNCs need to identify a common organizational language. There is the dichotomy of choosing between the home country language or using a universally accepted language: English. However, this does not mean that employees in Denmark or China will speak English. The reality is that people want to be free to choose what language they use in whatever context they find themselves in. Part of learning to work together

across the GLOBAL R&D Network is learning to understanding each other. We can only do so through communication and therefore language is essential. There is no way around it. It may indeed be difficult for Danes and Chinese to use English in all of their company correspondences but it needs to be done. This is a basic yet essential first step towards creating the collaboration that is so urgently needed.

Headquarters is a dirty word...

In Bjerringbro (what I refer to R&D Denmark) there is a tone of inclusivity when they talk about R&D. They call it the “R&D Network” or “Grundfos Global R&D” but never do they call themselves “headquarters”. Their perspective about their context and their role in the context is pretty secure in their minds. The problem is when you are in R&D China or R&D US, then R&D Denmark becomes “Headquarters”. I began my investigations in Grundfos in Bjerringbro, Denmark. I had not been exposed to the other units and therefore, believed as everyone else in Bjerringbro that the concept of a Global R&D Network, where all R&D units having equal standing regardless of their level of expertise or the work they conduct (whether more research or more development) was perceived the same way across the Network.

This influenced not only my perceptions (until I reflected on this issue) as well as those of all participants. Stated more clearly, I can tell you that R&D Denmark has two roles, 1) it wants to be an equal partner in the global network and/but 2) it is part of headquarters and R&D Denmark houses R&D Global Program management and Business Development, as well as other functions and this in turn affects the dynamics of the relationships between R&D Denmark and R&D China and R&D US. One simple and practical example, is that individuals that work in R&D Denmark and the management of R&D Global work in the same building, eat in the same cafeteria, they have opportunities for face-to-face communication that facilitate the efficiency of their work processes. These individual cannot help it, they have a common language, share cultural references, and can easily keep up with the trivialities of their everyday lives. Global R&D units compete with these relationships. There is a lot that gets done informally, through network relationships.

The above phenomenon adds to the inconsistency experienced in the Global R&D network. Global R&D units receive mixed messages, where R&D Denmark at headquarters, says one thing but does another. They are told that “we are a global network and we need to work together to reach our aims” but for one reason or another this message is not enacted in practice. As you can feel by the excerpt above R&D knowledge workers are excited about the adventure of building up these networks and they are also aware that it requires hard work.

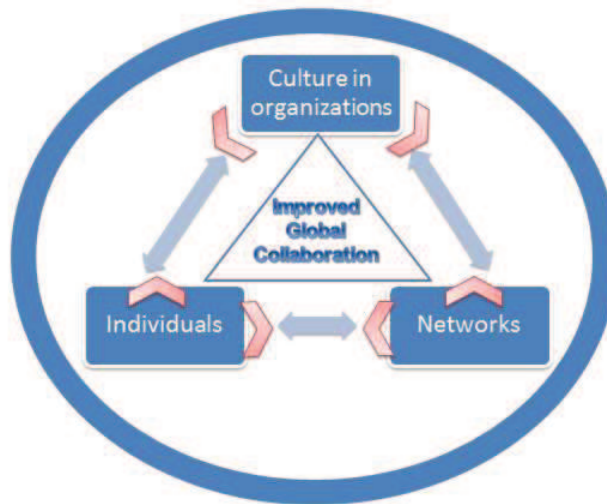
“We have a geographic and/or cultural prejudice. Right?! We all have these. Just by nature; we all grew up somewhere, in some context, and learned ways of doing things, ways of communicating and to some extent, we will always believe that those ways are the right ways”. USA001

1.4 Introduction of Conceptual Framework

R&D is founded on the desire to discover, create and improve. The contextual environment of this case really puts things into perspective. Culture, Networks and Individuals and their interactions are topics that are highly discussed along with a growing list of sub-components. One reason to consider examining the importance of networks is simply that this is the context configuration that we find ourselves in. The company and its employees understand the world through network structures. It is important to explore

what this means for individuals and the organization and their aspirations. Additionally, it is also important to consider individuals and their interactions as they are the drivers of collaboration. For as much technological advancements as we have in today's world, it is after all the human factor that keeps the world turning, it is our relationships that link us and determine events that take place. And lastly I will consider culture as it is an important aspect of the multi-national working environment and identifying how culture is understood and used will allow new perspectives to unfold.

Figure 1- Interconnectivity of Main Observations



Source: Jensen 2010

Due to the complexity I want to deconstruct the intra-organizational environment and identify which components are influential to the collaboration process within Grundfos' most prominent international R&D units. Thereafter I want to explore the inter-relationships of the most influential components that were identified in question 1. Lastly, I want to explore the combined effects of the components on collaboration and identify the best inter-relational connections that create the best collaboration and thus the best environment for outcomes for the organization.

1.5 Research Questions

The following section is designed to explain table 1, the research questions. The research questions evolve from the iterative process. There are three levels of research depth, i.e., explanatory, exploratory and reflexive. Below each question and the process is discussed.

Table 1- Research Questions

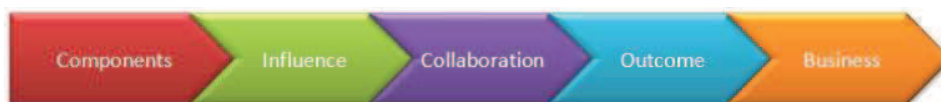
Main Research Question	<i>Which components are influential to the collaborative process within International R&D?</i>	Identification of the Environment (Explanatory)
Sub-question 1	<i>How do the most influential components interact?</i>	Inter-relationship of components: (Exploratory)
Sub-question 2	<i>What are the combined effects of the components on collaboration and outcomes subsequently?</i>	Best Process of interrelationship for best collaboration and therefore best outcomes: (Reflexive)

Main Research Question:

Which components are influential to the collaborative process within International R&D?

The main research question identifies the context-dependent environment by exploring different angles of the Grundfos R&D. The aim here is to better understand the Grundfos in general, secondly more specifically the construct of R&D in the case company. Additionally, the components that are present in the environment and what factors are likely to influence the various components while also considering what impact these factors may have. Figure 2 illustrates the idea with the main research question is to identify the components that influence collaboration that lead to positive outcome for the business of innovation. We cannot forget that while collaboration may be an impediment for the successful transnational working culture it is the overall outcome and its business effect that are of importance for Grundfos to continue growing stronger in innovation to secure market differentiations. The business focus is the 'long haul', it is an aim to be sustainable and provide innovative customer solutions while leaving the smallest environmental imprint.

Figure 2- Connection between the research questions towards a positive effect on business



Sub-question 1:

How do the most influential components interact?

Sub-question 1 explores the environment for the inter-relationships. What factors are likely to influence the interrelationships and what impact do these factors have on collaboration.

Sub-question 2:

What are the combined effects of the components on collaboration and outcomes subsequently?

Sub-question 2 considers the answers from the main research question and sub-question 1 together with all pertinent impressions from the data and the extant theories examined to consider what the best process of inter-relationships for the best collaboration and therefore best outcomes could be. In other words, what steps should be taken in order to improve the overall set of interrelationships.

1.5.1 Definition of Terms

It is important to clarify the terms used in the research questions so that there is an established understanding of what is meant by certain terms for this study. Below I clarify the following terms: components, collaborative process, international R&D and influential.

Components are important, essential, necessary parts of something.

Collaborative process is the process by which the most effective and sustainable relationships are established in order to get the task successfully completed. It should be noted the literature makes a distinction between cooperation (loosely coupled relationships), coordination (formal relationships without significant mutual risk or investment in one another) and collaboration (intensely-coupled and long-term relationships with both mutual interest, risk and investment), however, these terms are used interchangeably in practice (please see Mattessich, Murray-Close and Monsey 2001:39 for an elaborated definition of the differences). For the purpose of this study I will focus on collaboration as it “connotes a more durable and pervasive relationship...Such relationships require comprehensive planning and well defined communication channels operating on many levels”.

International R&D is the act of internationalizing R&D into foreign countries.

Influential is defined by Merriam-Webster’s dictionary as, “having power over the minds or behavior of others or having great power or influence”, whereas influence is defined, “as the power to direct the thinking or behavior of others usually indirectly”.

Knowledge worker is “defined as person with the motivation and capacity to create new insights and to communicate, coach, and facilitate the implementation of new ideas” (Horwitz et al. 2006; Horwitz, Heng and Quazi, 2003 in Chieh-Peng, Lin 2010:300).

1.6 Limitations of the Study

Focus on Internal R&D networks, on people and interaction

This study focuses on developing research on a specific type of network: intra-organizational multi-national knowledge networks. This distinction allows for the study of internal organizational networks that transcend one location, focus on the sharing of information and expertise for the development of new knowledge with a particular focus on the long-term and reciprocal nature of developing innovative solutions such as the Grundfos Global R&D Network.

My focus on the three most influential components of collaboration processes, which is brought on by the data, creates boundaries for this study. The methodological standings of the study—a multi-perspective research approach, incorporating *grounded theory*, *case study* and *action research*—allow for a natural

delimitation and direction, identifying what is most necessary to follow. Due to the nature of the methodological approaches additional limitations are outcomes of a process of exploration; of the iterative and reflective processes. Instead of articulating here exactly what the limitations are I emphasize my focus and starting point is based on the data and conceptual framework presented in section 1.4 above, which is also guided by the data. The following section further articulates what can be said about the parameters of this study.

1.6.1 Practical Aims and Ambitions

The fact that Grundfos is the case company will create a constant interplay between theory and the empirical phenomena being studied. Research activities conducted within this study will therefore focus on the development of theoretical constructs within the context of the dynamic international R&D activities. Through an iterative process this study will examine, understand, and analyze the Global R&D Network. It is the aim of this study to draw attention to MNC's, specifically their R&D networks, i.e., Grundfos R&D, whose ambition is to become global; this study will:

- Examine the concept of networks within R&D activities in three countries: Denmark, China & the US
- Bring attention to the importance of individuals and their interactions within intra-organizational multi-national knowledge networks
- Bring attention towards understanding how individuals share and exchange knowledge can improve how they collaborate within global organizational networks.
- Present an in-depth case based on the case company, Grundfos and explore presented theoretical elements through the case data
- Suggest improvements based on an iterative process between literature and empirical data collected
- Reflect on what could be further addressed; future research

Contribution to the Study field

- Carry out empirical work that has not been done before
- Making a synthesis that has not been done before
- Being cross-disciplinary and combining different methodologies not common to business research
- Adding to knowledge in a way that has not been done before

This study focuses on the internal network relationships in MNC's R&D activities, a relatively untouched aspect in the literature. Most of the literature on networks in business has focused on the external networks of organizations and also the inter-organizational networks that facilitate collaboration between business partners. Due to compounding amounts of data and trends this study turns the lens inward and explores internal network relationships. This study combines three fields of study that have weaknesses on their own in the literature and strengthens them through the inter-relationships. For example, network literature only minimally addresses the individual, focusing more on the structure and on quantitative measurements. The culture literature has been overrun with typologies that limit the ability to see different perspectives; this study explores origins of culture and figuratively "shakes the bag" of preconceived notions of culture in business.

The PhD study's overall purpose can be summarized as understanding and improving how MNC's manage their global R&D networks and how their employees can improve their collaboration and understanding of their global colleagues with the end goal of laying the foundation for creating and/or improving inter-cultural synergies in their global networks. The focus on the Global R&D Network creates a unique circumstance where: (1) the individual actors and their relationships play a key role in how the network is developed, and (2) the knowledge that is shared, transferred and managed becomes critically important to the network through focus on collaboration processes. Through a multi- method approach, this study will research Grundfos R&D in order to better understand Global R&D Network and how best to create a better understanding of the context for improving collaboration processes.

1.7 Organization and the outline of the Study

For simplification purposes the study is divided into the following four parts; there are a total of 13 chapters. However, it is by no means representative of the actual order/process the study was conducted in; it is merely the most direct way to communicate the study and its findings.

Part I- Setting the Scene

- Chapter 1- Introduction
- Chapter 2- Methodology
- Chapter 3- Conceptual Framework- Grounding the data
- Chapter 4- Case Presentation

Part I includes Chapters 1-4. This part is meant to provide the reader with all the understanding necessary to make sense of the significance and purpose of conducting such a study. Chapter 1 introduces the background of the study, setting the scene and context of the study and includes a brief introduction to the case company, critical points of revealing data, which leads to the introduction of the conceptual framework. This is followed by the research questions and a discussion on limitations, ambitions and study organization and outline. Chapter 2 presents the methodological assumptions for this study, followed by a description for the use of three approaches, i.e., grounded theory, action research and case study. A summary of the applied methods follows and the chapter concludes with an operative paradigm, giving a brief narrative of the process and progress of the study; this in line with the methodology, approaches used, as it provides transparency and clear lines for the reader to attain an even better understanding of the study. Chapter 4 presents the case company, Grundfos, Grundfos R&D, and each of the R&D units, US, Denmark and China.

Part II- Journey of Discovery

- Chapter 5- R&D Denmark
- Chapter 6- R&D US
- Chapter 7- R&D China

Part II encompasses three chapters each representing one of the R&D units explored in this study. Each chapter presents the emergent themes and concludes with a summary for practical applications regarding the situation at each R&D unit. Part II of this dissertation is representative of stages 2 and 3 of the constant comparative method used in Grounded theory (stage 1 is primarily a process conducted in Nvivo and through memoing, thus not shown in the actual dissertation as such).

Part III- Literature Exploration and Reviews

- Chapter 8- Internationalization of R&D Activities
- Chapter 9- Culture Literature Review
 - PART I- Understanding the origins of the concept of culture
 - PART II- Understanding organizational culture
 - PART III- Identifying the influencers of culture and their significance in business
- Chapter 10- Networks Literature Review
 - PART I- Three main approaches used in the literature for conceptualizing business networks
 - PART II- Deconstructed and explored social characteristics of networks
 - PART III- Defined networks and sense-making for this study
- Chapter 11- Individuals and their Interactions Literature Review
 - PART I- Understanding the individual
 - PART II- Understanding interactions
 - PART III- Social process techniques

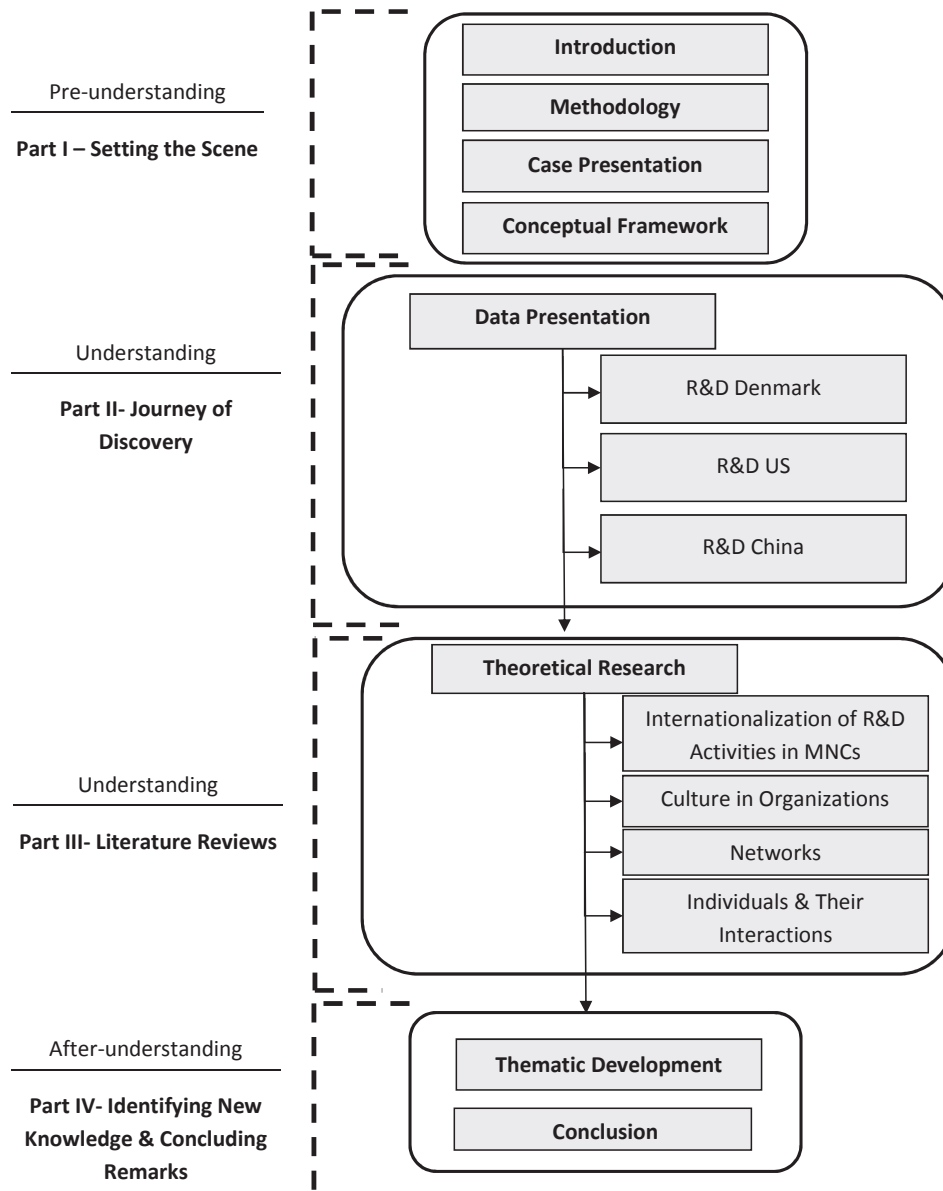
Part III focuses on reviewing the literature and includes Chapters 8-11. Chapter 8 concisely reviews the internationalization of R&D activities, providing background knowledge on R&D. Chapters 9-11 deal with the three main components, these chapters are further organized into three sub-parts as denoted above (there is a subtle distinction where the parts within Chapters 9-12 are PARTS uppercase and underlined while the overall dissertation's four Parts are written in large font and are on a standalone page with a Part introduction). Throughout the dissertation when I refer to one of the main four Parts it will look as such while when I refer to in chapter PARTS, it will look as such in addition to specifically referring to whether the part being discussed is part of the dissertation or a specific chapter.

Part IV- Identifying New Knowledge & Concluding Remarks

- Chapter 12- Thematic Development- The Analysis and Suggestions
 - PART I- Three Most Significant Components Towards Improving Collaboration
 - PART II- Examination of the Components' Interlinking Relationships
 - PART III- Implications, Ramifications & Practical Applications
- Chapter 13- Conclusion

Part IV is a cumulative synthesis of all data, information and knowledge gained and includes Chapters 12-13. Chapter 12 is also further organized into three in chapter sub-parts where PART I presents the three components, PART II the interlinking concepts and PART III the discussion and suggestions for Grundfos. Chapter 13 concludes the study, revisiting the research questions, reviewing the methodological journey and addressing the future research directions. Part IV of this dissertation is representative of stages 3 and 4 of the constant comparative method used in Grounded theory.

Figure 3- Project design



Chapter 2

2 Methodology

2.1 Positioning the Study

Methodology can be described as the organizing and understanding of the philosophical assumptions underlying a study and the subsequent methods that are applied. Researchers use methodology as a tool to make sense, label, define and identify the underlying processes of how they reason the world so that they may be able to further examine it. Methodology can be further simplified as the understanding of the ontological (why) and epistemological (how) underpinnings of a study. It is important to consider how the methodological choices are undertaken as these will affect the study objectives. Selecting the appropriate methodology requires that one considers the research objectives, in this case both empirical and academic ones.

As was explained in Chapter 1, this study aims at exploring and identifying new understandings for the case company, Grundfos, specifically with regards to the internationalization of R&D activities, as well as exploring culture and individual and their interactions; while being true to the diversity and ambiguity present in the environment of the case company. I believe that by choosing a qualitative multi-perspective approach one can truly expose the multitude of realities that are 'lived' in the company. The research implies a need to focus on interpretations, to observe, and to participate when necessary and possible. From the start, the study's problem field, its context and complexity lead to a focus on the individual and their interactions. Therefore, it was important for the applied methodology to do the same. "Qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them" (Denzin and Lincoln 2005). Given the pursuit for understanding, for a holistic, iterative process, for a focus on meaning and interpretation, and the above contextual research objectives steer the study towards a qualitative stance.

This chapter describes the methodological stance taken in this study. It will allow for the reader to gain clarity and understand the purpose specific to the methodological foundations that drive this study. Firstly, I have undertaken a qualitative position and will expand this position through the presentation and discussion of this study's ontological and epistemological considerations. These will lead to a discussion of the three research approaches I will use in the study: 1) grounded theory 2) case study and 3) action research. These discussions are followed by a presentation and explanation of the chosen research methods. Lastly, I will discuss my roles as a researcher and its possible effects on the study.

Why explore this study from a qualitative perspective?

"While there are clear merits associated with quantitative methods, the multi-cultural, multi-dimensional and dynamic nature of the field of [business] lends itself to a broad range of research methodologies, qualitative methods being one of them. In order to understand the complexities of emergent and evolving phenomena scattered over distance, and the differentiated contexts typical to many topics under investigation in OB [organizational behavior], it is often

inappropriate to engage in large-scale, cross-sectional studies or reductionist methods in the absence of well-developed theory. Rather, thick description, exploratory research and comparative case analysis that focuses on inductive theory building and hypotheses generation may be more suitable” (Birkinshaw, Brannen and Tung 2011:573).

I also agree with Padgett (2004:4) when she states, “Qualitative knowledge is based not on decontextualized bits of information, but on weaving back and forth between local context and conceptualization”. Moreover, she further explains of qualitative methods that they “invite us to assume a perspective that is open to interstitial meaning, to see both the overarching contours and the hidden crevices”, in other words, exploring the phenomena from a multi perspective view. Moreover, Miles and Huberman (1994:35) state that, “if you are running an exploratory, largely descriptive study, you do not really know the parameters or dynamics of a social setting; so heavy initial instrumentation or closed-ended devices are inappropriate.”

The following is a more detailed explanation of both the ontological and epistemological considerations that drive the methodological stands for this study.

2.2 Philosophical Foundations of the Study

“One’s belief about reality and how to obtain knowledge about reality are defined as ontology and epistemology” (Hughes and Sharrock 2007); they therefore define how we see what we see and how we understand what we see. This section explains both ontological and epistemological considerations and selects corresponding paradigms relevant to this study—*constructionism and interpretivism*.

2.2.1 Ontological considerations

Ontology is concerned with, “the nature of social entities. The central point of orientation here is the question of whether social entities can and should be considered objective entities that have a reality external to social actors, or whether they can and should be considered social constructions built up from the perceptions and actions of social actors” (Bryman and Bell 2007:22). Ontology is further described by opposing positions: *objectivism and constructionism*. Essentially, these two positions are defined by how they view the world; objectivism views the world independent of human beings while constructionism views the world as being enacted through human beings. While I agree that some things in our world can be viewed through objectivistic ontology, e.g., the sun will rise and set no matter how many more hours of daylight I wished to will into existence. For the purpose of this study that focuses on human interaction and the subsequent relations and effects of these phenomena, then constructionism makes most sense. Human beings are for the most part in a constant state of interaction and because of this interaction they are redefining their identity and that of those they interact with.

2.2.1.1 Naturalist or Constructivist Inquiry

Lincoln and Guba (1985) state that, “social phenomena are investigated with minimal a priori expectations in order to develop explanations of these phenomena” (Bowen 2005:209). Bowen (2005) also adds that a naturalistic ontology applies best as it focuses on, “natural setting, qualitative methods, purposive sampling, inductive analysis, grounded theory, case study reporting mode, tentative application of findings, and special criteria of trustworthiness (Lincoln & Guba, 1985).” “Social constructionist inquiry is principally

concerned with explicating the process by which people come to describe, explain, or otherwise account for the world (including themselves) in which they live. It attempts to articulate common forms of understanding as they now exist, as they have existed in prior historical periods, and as they might exist should creative attention be so directed" (Gergen 1985: 266). "Social Constructionism thus emphasizes that constructions of individuals as well as organizational identities are relational: any identity construction takes place in relation to 'the other'" (Søderberg and Vaara 2003:31). From a constructivist perspective how the researcher views the world is essential in understanding that world that is being studied; since he/she is part of the construction of reality then it stands to reason that the researcher can influence whether deliberately or unwillingly, the data and its subsequent analysis. It is with this thinking in mind that I take a moment towards the end of this chapter to also discuss my role as a researcher and the possible effects that it may have on the study.

2.2.2 Epistemological considerations

The main issue when considering epistemology is "whether or not the social world can and should be studied according to the same principles, procedures and ethos as the natural sciences" (Bryman and Bell 2007:16). Just as ontology is further described by the opposing positions of objectivism and constructionism, epistemological considerations are also further described by in this case the opposing positions of positivism and interpretivism. Similar to how objectivism and constructionism understand the role of humans in the world; positivism and interpretivism focus on making sense of how individuals understand the world around them. For the purpose of this study that focuses on human interaction and the subsequent relations and effects of these phenomena, then the interpretivist paradigm makes most sense. Epistemology is concerned with understanding (Crotty 2003:10)—with knowledge processes and these are intertwined with cognitive-contextual interrelationship found in a constructivist perspective. Therefore, in this case where constructionism and interpretivism are focal paradigms, hermeneutics also becomes beneficial/ central for our epistemological understandings. First let us explore interpretivism and follow with a discussion of hermeneutics.

2.2.2.1 Interpretivism

The Interpretive paradigm understands the world as it is and the fundamental nature of the social world by exploring subjective experiences; it came about as a critique of Positivism, in an effort to understand and explain human and social reality (Crotty 2003:66). It seeks explanations within the individual's consciousness and subjectivity. In other words, it seeks explanations within the participants in addition to observing and interpreting behavior. The social world is viewed as resulting from social processes happening between individuals. The orientation is towards understanding the subjectivity created in the social world "as it is" in terms of an ongoing process (Burrell and Morgan 1979:28-32). Since the individuals/actors are viewed as the creators of the social world, their values, and understandings among other things cannot be separated from science. As Crotty (2003:67) indicates, "The Interpretivist approach... looks for culturally derived and historically situated interpretations of the social life-world."

Remenyi et al (1998) presents a strong argument for Interpretivism by postulating the need to discover, 'the details of the situation to understand the reality or perhaps a reality working behind them' (Remenyi et al., 1998 in Saunders et al 2003:84). This however leads me to ask, *do we as participants in a social environment continuously construct, destroy, establish, renew, revoke or revise the reality of our existence?* It is our understandings, interactions, interpretations and perceptions that construct our social world. As

the underlying ontological considerations found in Interpretivism, Constructionism is understood as, “people not only trying to interact but also making sense of their environment through interpreting events and the meanings they draw from these” (Saunders et al 2003:84). Although uncannily similar to Interpretivism the ontological considerations embrace a deeper level of thought by implying that social phenomena are created through social interaction and are at a constant state of change (Bryman, Bell (2007:23).

2.2.2.2 Hermeneutics

The interpretive paradigm has its roots in the hermeneutic-phenomenological tradition because of the emphasis placed on social action. This focus comes from the fundamental difference in the way natural sciences perceive the social world; a reflection of the distinctiveness of humans and its stringent opposition of positivism (Bryman & Bell 2007:17-20). It is believed that understanding will never appear as objective knowledge in the shape of statistical regularities. The reason for this is that social phenomenon as well as actors are considered the carriers of meanings and this is exactly what is being researched – the meaning of a phenomenon. Every case is considered unique and cannot be pushed into an objective and quantitative rule.

“The aim of phenomenology is to bring out the ‘essences’ of experiences or appearances (phenomena), to describe their underlying ‘reason’ (Pivcevic, 1970 in Cope 2005:164). “Hermeneutics has been influential in the general formulation of interpretivism as an epistemology and is more or less synonymous with Weber’s notion of *Verstehen*” (Bryman and Bell 2003:574). Hermeneutic² is concerned with understanding and interpreting, which sets the focus on the subjectivity of the individual and his/her perceptions of reality and thus also sets focus on human action. There are two main reasons why this approach is attractive to qualitative researchers: (1) emphasis on the perceptions of the subjects and (2) sensitivity to context (Bryman & Bell 2007:575). It is necessary to explore the subjective meanings motivating people’s actions in order to be able to understand these (Saunders et al., 2003:84). Actors are viewed as having a say in what is happening in society. They have power to change things and they are responsible for the development of society and the environment.

2.2.3 Methodological Paradigm- concluding remarks & links to approaches

A Constructivist- interpretive paradigm guides the study’s meaning in that the actors create and interpret their reality. Through this an inductive-abductive style helps to identify phenomena through the iterative process.

Interpretivism unlike positivism does not place people in square boxes, nor does it ask to choose one truth; Interpretivism seeks to find out the many complexities that abound in the social world. The nature of qualitative research makes for findings that tend to be quite unique and specific and as such more difficult to generalize from. For critics the subjective nature as well as the difficult to duplicate/generalize are two key issues. Critics assume that exploration and discovery can be equated to an ‘unstructured nature’ and conclude that it is the reason that it is difficult to generalize. Critiques have also commented on issues with

² Originally hermeneutics was the study and interpretation of theological text but has come to be known as influential in the formulation of Interpretivism and not just interpretive to text but also to social actions and other non-documentary phenomena (Bryman & Bell 2007:574).

transparency and authenticity (Bryman and Bell 2007:423-424). However, Saunders *et al.*, (2003:84) concurs that many would agree this philosophical stance is in line with much business and management research. People place many different interpretations on the situations they find themselves in. "These interpretations are likely to affect their behavior and therefore their actions as well. Thus we can say it can affect the '*nature of their social interactions*'." Meaning comes from the interpretation the actor takes from their experiences and understandings of interactions as well as the sharing of these meanings and interpretations. "In a sense, people interact with their environment, but they also seek to make sense of it through their interpretation of events and the meanings that they draw from these" (P. 84). "According to Remenyi *et al.*, (1998:35) the strongest argument the interpretivist could mount is the need to discover 'the details of the situation to understand the reality or perhaps a reality working behind them'" (Saunders *et al* 2003:84).

Given the above discussions and the context of this study it has come to my attention through the course of my research that simply one research approach would not sufficiently telling the story. This goes in line with both the ontological and epistemological underpinnings of exploratory, qualitative research that have been discussed in this section. The following section will introduce and elaborate on the three approaches selected.

2.3 A Multi-Perspective Research Approach

There has been a greater call to action in qualitative research, with the constructivist and participatory phenomenological models, moving from interpretation and the search for Verstehen and embracing social action (Guba & Lincoln 2005:201). This also is indicative of the need to integrate approaches. In the pursuit of realizing the most value of theory in practice, then it is as Hatch (2006) illustrates, "we must master the use of multiple perspectives, for it is in bringing a variety of issues and ideas to the intellectual table that we will learn how to be both effective and innovative in our organizational practices". For this study I find there is value in creating distinctions between several perspectives. Due to what I have experienced and studied with the aim of answering the research questions, I have come to terms with the need to use more than one approach to express and communicate my findings in this study. It is only by integrating case study, action research, and grounded theory that we can begin to tie together a story for Grundfos and a story for global networks of individuals and their interactions.

This study will use three research approaches: *grounded theory, case study, and action research*. Grounded theory (GT) is an approach where by data is followed so that emergent topics together with the researcher's interpretations and understanding analyze the phenomena and develop theoretical conceptualizations and models. Case study research approach is a classic approach in qualitative research where the researcher follows phenomena, usually with a specific protocol and aspired outcome to explore, explain or describe. Action research approach is in its purest sense a co-creation with the clients (the given organization, group or individuals). Action research has as its aim to follow iterative cycles and create change in the studied setting.

I have identified these three approaches in the study. GT guided the focus of data collection in an exploratory study. Case study helped the study with visualizing boundaries and action research accounts for the aspects of the study where I, together with R&D employees and Grundfos advisors collaborated on identifying the phenomena to be explored. While from an pure Action Research perspective the co-creation

with clients is key, I used these critical interactions of meaning and understanding as data and not as a “given”, therefore, turning from action research back towards GT. This is why these three approaches worked well together; what Action research could not handle, the grounded theory approach was able to deal with. Below each approach will be discussed in more detail, all the while highlighting relevant models, strategies, and techniques being used in the field and concluding with a section called *Research Approaches in Practice* that will further explain the convergence of these approaches.

2.3.1 Grounded Theory

The aim of grounded theory (GT) is the *discovery or generation* of theory through a close and rather intimate relationship with the data. Grounded theory originates of the work of Glaser and Strauss in 1967 and their individual backgrounds contributed a great deal to the development of grounded theory; where Glaser’s background added statistical analysis to “his model for the qualitative method in grounded theory” (Alvesson and Sköldbberg p.15) and Strauss brought with him his background in symbolic interactionism. Attempting to break new ground in researching social processes from a qualitative perspective, Glaser’s rigor was accepted but over shadowed by one of the most important influences on grounded theory – symbolic interactionism; from here we can account for the following central features: pragmatism, idiographic research, qualitative method, exploration, sensitizing concepts, social action, cognitive symbols, empirical orientation, and successive induction from empirical material (Alvesson and Sköldbberg 2005:12-15). Over the last four decades several authors have critiqued, revised and further developed upon the original work of Glaser and Strauss (1967). This discussion and overall use of grounded theory will stay true to many of the original tenants of grounded theory, but also incorporate significant discussions and developments from primarily the following authors: Glaser (1978, 2001), Goulding (2002), Alvesson and Sköldbberg (2005) and Charmaz (2006; 2005; and 1990). Thus creating an integrated, working understanding of grounded theory that is still true to its founding essence but that is adapted and applicable to our changing times.

The critical issue with conventional research was that for one, it started from deduction and was therefore, detached from reality and as Alvesson and Sköldbberg (2005:16) explain theories formalized through deductive logic, “easily acquire a speculative stamp and therefore lose contact with the empirical base... the empirical data are pushed by force into the categories of the theory”. Perhaps “pushed by force” is an over exaggeration, however, be that as it may, the grounded theory approach helps to identify the relationships and organize the links made through the inductive approach; thus, concepts emerge instead of being pre-defined. Grounded theory is not focused on verifying the facts but rather the main purpose is to “generate theory”; “for in generating theory it is not the fact upon which we stand but the conceptual category that was generated from it. A concept may be generated from one fact, which then becomes merely one of a universe of many possible diverse indicators for, and data on, the concept” (Glaser and Strauss 1967:23). Furthermore, Glaser and Strauss (1967:32) state that their “strategy of comparative analysis for generating theory puts a high emphasis on theory as process; that is, theory as an ever-developing entity, not as a perfected product”; “theory as process...renders quite well the reality of social interaction and its structural context”.

2.3.1.1 Conflicting Approaches to Grounded Theory

One of the main reasons for so much division on one theory is that from the start the dichotomy between the two authors, Glaser and Strauss, was quite expansive. The split between Glaser and Strauss can be summarized as follows:

“Essentially, Glaser (1998) persists in demanding the researcher’s unconditional submersion in the data so as to let theory emerge and insists on keeping tabs on all preconceptions and/or avoid them in the first place. Strauss and Corbin have developed the coding system further so as to take the researcher systematically through every stage of the research [perhaps diverging from the purpose of the freedom that comes from using grounded theory]. Both stances are not unproblematic: Glaser’s approach allows for more creativity but bears the risk of lack of coherence and focus, whereas Strauss and Corbin’s approach bears the risk of formalism and inflexibility” (Fendt and Sachs 2008:444).

Glaser and Strauss went their separate ways and continued further developing grounded theory in their own particular ways. This resulted in two divergent streams of grounded theory. Strauss and Corbin (1990) introduce a more stringent coding process further fragmenting theoretical sampling into four types. Glaser (1992:104) responded by pointing out that “so many rules...to follow one can only get lost in trying to figure it out”. Glaser was not alone, as Goulding points out in her review, Coyne (1997) and Melia (1996) also suggest that an “over-formulistic model can only “confuse the issue” and lead to “description” instead of discovery. While some may be overwhelmed by the freedom that comes from Glaser’s model, I find that the point of grounded theory is an arduous journey of discovery, a keen to being in metaphorical trenches and fighting the enemy of nomenclature. It is important that I explicitly choose a side to be true to the use of grounded theory; I choose Glaser and the journey of discovery.

Glaser and Strauss (1967) overemphasized the emergence of concepts from data but of course, it is self-implied in the original texts that data emerges through the interaction of the researcher with the area being studied, i.e., the data! The researcher is nothing but active in interaction; not “passive” as interpreted by Charmaz (1990:1164). Founded on these same thoughts about the original grounded theory Charmaz (2006) has developed social constructionist grounded theory and it was fueled due to the opinion that data and theory are not emergent and discovered they are constructed between the participants and the researcher, between the researcher and their underlying beliefs, values and pre-understanding of the field of study and knowledge in general. A key distinction that is contradictory is that while Charmaz (1990:1165) explicitly differentiates that social constructionist view of the process of categorization as “dialectical and active, rather than as given in the reality and passively observed by any trained observer”, I seriously have trouble understanding how she gathered that Glaser and Strauss said anything of the kind regarding the process of categorization. Glaser and Strauss actually make countless references to the researcher’s keen ability and “insight” to be able to decipher categories and we all can agree that the process whether we view it as solely inductive or a mixture between induction and abduction, is infused with exactly that which Charmaz claims they fail to recognize. Nonetheless Charmaz (2006) makes considerable and positive contributions to the further development of grounded theory, indeed exploring it from a more social constructionist perspective, which Glaser and Strauss could never have successfully accomplished in the 60’s when academia was ruled by positivistic methodologies.

"The rigor of grounded theory approaches offers qualitative researchers a set of clear guidelines from which to build explanatory frameworks that specify relationships among concepts. Grounded theory methods do not detail data collection techniques; they move each step of the analytic process toward the development, refinement, and interrelation of concepts" (Charmaz 2003:251). Padgett (2008:32-33) lists the grounded theory procedures below:

- Opening coding of interview transcripts
- The coding process may use sensitizing concepts drawn from the literature, extant theories, and previous research but its primary goal is inductive.
- Coding Axial
- Coding Selective
- Gradually creating a parsimonious comparative analysis
- Constant comparative analysis

There are two main aspects of grounded theory that have been the source of controversy and the later fragmentation/further development, depending your perspective, the concept of 'tabula rasa' and Strauss and Corbin's (1990) stringent positivistic treatment of the data. The 'tabula rasa' aspect has been twisted by both sides of the argument thus I will not spend time here reviewing its history but rather use the table below to explain the claim and move past it.

Several disadvantages of using grounded theory and constant comparative method should be considered before embarking on this journey; grounded theory is a risk, it is time consuming, takes lot of out of you personally and is difficult to live with the uncertainty of waiting until the end of your study to see if theory develops. However, if you are true to the grounded theory approach you know that you will continue to have reflections and revelations about the study even after you have submitted your dissertation. Here Glaser and Strauss (1967:107) illustrate how it can be for the researcher, "The analyst may spend hours on one page or he may code twenty pages in a half hour, depending on the relevance of the material, saturation of categories, emergence of new categories, stage of formulation of theory, and of course the mood of the analyst, since this method takes his personal sensitivity into consideration. These factors are in a continual process of change". Thus the joint coding and analysis of data cannot be reduced to a systematic process such as in predesigned research. This continual process of change Glaser (1978) later compares to as handling "several journeys" through a set of double back steps; this for me is likened to and becomes part of the iterative cycles also used in the case study approach as well as in action research.

The other main point of contention for many scholars was the postulation that formal theory could be achieved through substantive theory.

"Substantive theory is a strategic link in the formulation and generation of grounded formal theory. We believe that although formal theory can be generated directly from data, it is more desirable, and usually necessary, to start the formal theory from a substantive one. The latter not only provides a stimulus to a "good idea" but it also gives an initial direction in developing relevant categories and properties and in choosing possible modes of integration. Indeed it is difficult to find a grounded formal theory that was not in some way stimulated by substantive theory" (Glaser & Strauss, 1967: 79).

Scholars today such as Fendt and Sachs (2008:451-452) ask for the complete omission of this assumption. They very simply declare that it should just be done away with. I do not understand and I would go as far as to call it “obsession” with the reformulation of grounded theory and it seems to be that while a difference of opinion is healthy this extreme only proposes to devalue the work of colleagues. Glaser and Strauss’s (1967) postulation regarding the interrelationships between substantive and formal theory are interesting and albeit harmless; it is in the application of it by the specific researchers that can reduce its worth to nonsensical and pointless considerations. Overall, while one can determine that the theory can benefit from some updates and additional explanations and elaborations of some good points to keep up with dynamic times, I have nothing against their claim and on the contrary understand and support their postulations of that interrelationship.

Then, it begs the questions, how much should be accepted and how much of the original theory should stay the same? This is not a discussion to take up here. However, I will treat those key dilemmas that I believe should be updated and that I do consider important to the structure of this study in the table below. This table is meant as a conclusion of the critique of grounded theory, it reflects the above discussions. The remainder of this section continues with those key aspects of the original theory that still apply, infused with applicable modern developments discussed here in. It needs to be stated explicitly if it has not been understood as of yet, that this study follows what Parry (1998 in Goulding 2002:160) calls “full grounded theory” as described by Glaser and Strauss (1967) and this means that it is not partial grounded theory as such this study is designed to take the reader along the journey of discovery and theoretical development. For example, Part II of the study presents the thematic development of the data for each R&D unit, Part III presents the literature review for each of the three components and each of these chapters is further organized into three PARTS that develop and review the components (components should also be understood as concepts under GT). Furthermore, the literature reviews in Part III and the analysis in Part IV also explore the relationships between components. Lastly, the study also takes into consideration any relevant historical events that may have affected the development of the concepts. Therefore, I am confident the study follows through with what Parry (1998) calls ‘full’ a grounded theory approach.

Table 2- Critique and Pragmatic Considerations of GT and my reflections of these

Key dilemmas or claims	Scholars that address the issue	Pragmatic considers to claims	My personal reflection after reviewing the literature on Grounded theory
Neutral, dispassionate role of researcher, tabula rasa approach, blank slate	Fendt and Sachs (2008); Goulding (2002); Charmaz (1990); Suddaby (2006)	Understand and accept this idea as an ideal, not as dogma. Keep an open mind and a willingness to trust in data. Disclose in detail the researcher's philosophical stance, prior experience, and so on. Use this experience to the full in the interpretation process. Make the study reflect a point of view, as long as it is clearly demarcated as such—and interesting and useful.	In Glaser and Strauss (1967:45) they very explicitly explain their position on this point, "The initial decisions are not based on a preconceived theoretical framework". No one is asking you to be a tabula rasa. Glaser and Strauss were merely explaining that the emphasis is on embracing the data, meeting it without planning or designing a research plan or strategy.
Cost-benefit view	Fendt and Sachs (2008)	Reduce the coding procedure, redefine data saturation. Reduce formalism—make sure the method serves the researcher, not that the researcher serves the method.	Grounded theory is about meaning in context—to explore concept interrelations and possibly develop theory out from these, but most importantly it is to identify improvement tools for participants and new theory for academia. It is important not to get lost in the line-by-line analysis of the data; it is not text analysis; it is context analysis—any researcher undertaking grounded theory should remember it.
Theory pretense	Fendt and Sachs (2008)	Moderate the theory pretense; drop the grand unified theory pretense altogether.	I do not really have a problem with this if we look at it as a process of someone's career in academia. However, not as part of one study. Still I have to state that Glaser and Strauss (1967) never said you had to, they just suggested that it could be done.
Quantitative Language	Goulding (2002); Coyne (1997); Charmaz (1983 in Goulding)	Misconceptions arise through the language of the method as the procedural aspects and rigor liken in to "logico-deductive quantitative procedures".	Goulding (2002) refers to Coyne (1997) who explains that in order for Grounded theory to have succeeded in 1967, it needed to be the way that it was: rigorous and as quantitative sounding as possible. The whole air of Grounded theory despite its language (that was merely there to convince the majority leading academics at the time) was to embrace the insight and interpretive nature of the relationship between data and researcher to create and discovery something new.

Source: created from a review of the literature on Grounded theory

2.3.1.2 Key Characteristics of Grounded Theory

Grounded theory is, “multivariate. It happens sequentially, subsequently, simultaneously, serendipitously, and scheduled” (Glaser, 1998). “The rigor of grounded theory approaches offers qualitative researchers a set of clear guidelines from which to build explanatory frameworks that specify relationships among concepts. Grounded theory methods do not detail data collection techniques; they move each step of the analytic process toward the development, refinement, and interrelation of concepts” (Charmaz 2003:251). The literature pinpoints two main aspects of grounded theory: 1) theoretical sampling and 2) constant comparative method. Theoretical sampling, according to Glaser and Strauss (1967:9) is, “the process of collecting data for comparative analysis designed to generate substantive and formal theory”. I will discuss theoretical sampling first and then follow with the elaboration of the constant comparative method reviewed below.

2.3.1.2.1 Theoretical Sensitivity

As I pointed out in the table above Glaser and Strauss (1967) never stated that researchers had to empty out their minds of all preexisting knowledge before entering into a grounded theory study; this has been a misunderstanding of the original writings. Goulding (2002:71) further supports and explains that “reading is not forsaken during the initial stages—it is vital—but in a substantive field it is different from the research”. The aim is for the researcher to “read for ideas and conceptually connect these to the developing theory in order to enhance theoretical sensitivity”. It is only when the theory that is being developed has “substance” that literature reviews on the concepts can be conducted.

2.3.1.2.2 Theoretical Sampling

Sampling is a snapshot of the population or phenomena being studied. There are many different types, variations of sampling, primarily based on the type of research and approach being conducted. In grounded theory sampling is directed by development of new knowledge of solutions to practical issues; the iterative process of data collection and analysis. Goulding (2002:66) makes the distinction that “not all purposeful sampling is theoretical”; perhaps it should be. However, “theoretical sampling is the purposeful selection of a sample according to the developing categories and emerging theory” (Coyne 1997 in Goulding 2002:66). Theoretical sampling according to Goulding (2002:156) means that sampling is controlled by data; it is not defined prior to the field research. The researcher cannot know in advance what to sample for or what discoveries it may lead to. I will conclude this discussion on theoretical sampling with the words of Glaser (1978:36) himself, “the process of data collection for generating theory whereby the analyst jointly collects, codes and analyses the data and decides what data to collect next and where to find it, in order to develop the theory as it emerges. This process of data collection is ‘controlled’ by the emerging theory”. Theoretical sampling allows for “flexibility during the research process”; providing the researcher the chance to change direction early in the study so that the data gathered reflects what is going on in the field as opposed to what interested parties think that should be the focus or what could solve their problems (Goulding 2002:68).

2.3.1.2.3 Theoretical Memoing

Theoretical memoing is “the core stage of grounded theory methodology” (Glaser 1998); if you are not writing memos you are not doing grounded theory. “Memos are the theorizing write-up of ideas about substantive codes and their theoretically coded relationships as they emerge during coding, collecting and

analyzing data, and during memoing" (Glaser 1998). "Without memos there would be no ideas. Memos help to generate relationships, abstract integrative frameworks and more general problems. They are also an excellent source of direction for future theoretical sampling" (Glaser 1978 in Goulding 2002:65). Memos are useful throughout the study with any form of data. Memos are also useful in handling observational data as well, they help with "conveying the story or events to the reader in a manner that is believable and a true reflection of the process".

Points to consider when memoing: prioritize memoing, write freely, take chances with ideas and do not censor yourself. In the initial stages, memos should be "open"; the fitness of concepts comes in later stages of theory building. At later stages consider using conceptual terms instead of simple pragmatic terms to abstract concepts out of the description of data (Glaser 1978 and Miles and Huberman 1994 in Goulding 2002:65).

2.3.1.3 The Constant Comparative Method

"The purpose of the constant comparative method of joint coding and analysis is to generate theory more systematically...by using explicit coding and analytic procedures" (Glaser and Strauss 1967:102). Reviewing the original writings by Glaser and Straus (1967:103-4) the constant comparative method carries the followings characteristics:

- Designed for the discovery of hypothesis and generating new theory that is close to real life situations.
- Designed to, "allow, with discipline, for some of the vagueness and flexibility that aid the creative generations of theory" (p.103).
- "Concerned with generating and plausibly suggesting hypotheses about general problems" (p.104).
- Not interested in ascertaining either the universality or the proof of suggested causes or other properties" (p.104).

Part of the popularity of grounded theory is the development of the constant comparative method and its corresponding four stages: 1) comparing incidents applicable to each category, 2) integrating categories and their properties, and 3) delimiting the theory, and 4) writing theory (Glaser and Strauss 1967:105). The constant comparative method allows researchers to generate theory through a continuous process through the four stages above and stages can even run simultaneously even through the analysis, providing continuous development. These stages and their flexibility really allow researchers the freedom to continuously identify, expand and adjust concepts depending on the data and the reflections, interpretations and insights of the analysis; they will be further explored below.

Stage 1: Comparing incidents applicable to each category

- Coding each incident into as many categories as possible.

Coding according to Glaser (1992) is "the conceptualization of data by the constant comparison of incident with incident and incident with concept, in order to develop categories and their properties"; this is the first basic rule of grounded theory. Open coding specifically refers to "the process of breaking down the data into distinct units of meaning" and this starts with the line-by-line analysis of a transcript or memo (Goulding 2002:76). "Codes are then clustered into groups that seem to indicate a relationship which says something about the behavior" (Goulding 2002:77). Glaser (1978) also suggests that categories remain

representative of behavior and not of people, as Goulding (2002:144), “they are not meant to be constant labels applied to individuals, but should be considered in the context of pertinent life circumstances”.

- Coding can be as simple as notes along a margin of a transcript or as elaborate as a software that links and organizes the categories.
- Code for new categories where they emerge, do not go back and re-code unless you reach the end of your coding and this category is not theoretically saturated.
- Keep track of the comparison group where the incident occurs.
- 1st Basic rule: while coding an incident for a category, compare it with the previous incidents in the same and different groups coded in the same category.
- Begins to generate theoretical properties of the category.
- Development of two types of categories: constructed by the researcher and emergent from the discourse.
- At this point researcher will experience chaos of thought, trying to make sense of everything.
- 2nd Basic rule: Stop coding and record a memo on your ideas; intended to tap into theoretical notions and relieve conflict in thought process. Here the aim is that the researcher begins to ground his thoughts and logic in the data and not conjecture or speculation.
- Write memos on the field notes, provides immediate illustration of an idea.

“According to Glaser (1978), the researcher must be prepared to stay ‘open’ to the possibility of new directions, and should be prepared to change, for example, interview style, place, and interviewees in order to follow up new ideas” (Glaser 1978 in Goulding 2002:68).

Stage 2: Integrating categories and their properties

- As the coding grows over time, the comparison shifts from incident to incident to comparison of incident with properties of the category that resulted from the initial comparisons of incidents.
- Constant comparison causes the accumulated knowledge pertaining to a property of the category to readily start to become integrated; in other words, related in many different ways, resulting in a unified whole.
- Categories become integrated with other categories, developing theory; forcing the researcher to make related theoretical sense of each comparison.

“By comparing where the facts are similar or different, we can generate properties of categories that increase the categories’ generality and explanatory power (Glaser and Strauss 1968:24 and Goulding 2002:69). Goulding (2002:167-168) points out integrating the data is a very personal experience “which occurs over time and through a process of constant review and re-evaluation of the information at hand. The nature of the data is usually such that it cannot be instantly dissected and understood. On the contrary the data require reflection, a sense of orientation and a personal understanding of context”.

Stage 3: Delimiting the theory

Goulding (2002:157) cites Wai-Chung Yeung (1997) who points to the importance/fact, “...that theoretical categories must be grounded in empirical evidence so that abstraction does not occur in a vacuum—they must be abstracted from concrete phenomena”. In order to move from the data to concept construction we need to be able to “abstract” the analysis away from the description. This abstraction of data “collapses more empirically grounded categories into higher order conceptual constructs” (p.77). (This could be

compared with that Strauss calls Axial coding- lifting the coding and analysis to a higher level by streamlining the core category and the interrelationships with other concepts).

- Delimiting occurs at two levels:
 - 1) the theory
 - Theories solidify in the sense that categories become fewer and fewer
 - Later modifications are only in the sense of clarifying the logic
 - Reduction: discovering underlying uniformities in the original set of categories or their properties, and then formulate the theory with a smaller set of higher level concepts.
 - Through reduction of terminology the theory can be made generalizable (exp. not just R&D networks but all Global Networks).
 - Through this stage researcher arrives at two major requirements of theory: 1) parsimony of variables and formulation and 2) scope in the applicability of the theory to a wide range of situations, while keeping a close correspondence of theory and data.
 - 2) the categories
 - Reduction in original list of categories for coding. Commitment to the theory allows the researcher to cut down the original list of categories according to the present boundaries of his theory.
 - As a result the researcher's considerations, coding and analysis become more select and focused.
 - Devote more time to the constant comparison of incidents clearly applicable to this smaller set of categories.
 - Categories are theoretically saturated, thus, further delimiting them.

Stage 4: Writing theory

- The researcher now possesses coded data, a series of memos and a theory.
- The discussions in his memos provide the content behind the categories, which become the major themes of the theory later presented.
- Before writing your theory, it is necessary to collate the memos on each category.
- Return to the coded data when necessary to validate a suggested point, pinpoint data behind a hypothesis or gaps in the theory and provide illustrations.

Goulding (2002:166) considers that essential theory is meant to "explain the situation at hand". The aim is to "develop fresh interpretations of the data rather than explicitly aim for any final or complete interpretation of it. This in itself is the most crucial part of the process. It is also on which must ultimately be referred back to the method of analysis and interpretation". Goulding (2002:166) further argues that the original grounded theory approach can be condensed into three basic stages:

1. Collection and interpretation of the data and is primarily concerned with demonstrating how, why and from where early concepts and categories were derived.
2. Abstract the concepts and look for theoretical meaning; review extant literature based on well-developed concepts.
3. Present the theory, uniting concepts and integrating them into categories which have explanatory power within the specific context of the research.

2.3.1.4 Conveying Credibility

According to Glaser and Strauss (1967:228-229) there are two sub-problems with conveying credibility: 1) is getting the reader to understand the theoretical framework. And this is done by presenting “an extensive abstract presentation of the overall framework and its principals associated theoretical statements, usually at the beginning and/or end of the publication”, 2) the second sub-problem is getting the reader to understand the data as the researcher did. Glaser and Strauss (1967:229) suggest ten standard devices that can be used:

- 1) Quote directly from interviews or conversations that he has overheard.
- 2) Include dramatic segments of his on-the-spot field notes.
- 3) Quote telling phrases dropped by informants.
- 4) Summarize events or person by constructing readable case studies.
- 5) Describe events and acts
- 6) Background description of places and spaces
- 7) Offer accounts of personal experience and how it impinged upon himself
- 8) Unroll a narrative
- 9) Chapter headings can help to convey insights.
- 10) Using codifying procedures for analyzing data (constant comparative method)

Credibility enables the researcher to develop confidence in his research but as Glaser and Strauss (1967:225) write, “conviction does not mean that his analysis is the only plausible one that could be based on [the] data, but only that [the researcher] has high confidence in its credibility”. Goulding (2002:89) adds to this list with member checking that simply means verifying with your respondents about the insights that you have gained from the coding and analysis process.

2.3.1.5 Four Properties for Applying Grounded Theory

According to Glaser and Strauss (1967:237) there are four “highly interrelated” properties when developing theory from grounded theory: these properties are: (Glaser 1998:18) has updated these four: fit, workability, modifiability, and relevance.

1) **Fitness.** “The theory must closely fit the substantive area in which it will be used”. According to Glaser and Strauss there are many aspects of the process that can influence the fit of the theory to the research area but as long as researchers are true to the everyday phenomena and continue to follow inductive and reflective characteristics the theory will be “highly applicable” to substantive areas.

2) **Understanding.** “It must readily understandable by laymen concerned with this area”. In any type of inductive, exploratory research the aim is to understand and provide theoretical constructs based on the close interrelationship between data and analysis. This research is usually conducted in field work and is part of someone’s “real life”; therefore, it is essential that the individuals/context that is being studied is able to understand and hopefully be able to use the theoretical developments. This does not mean that there may not be hesitation or defensive mechanisms at first glance as Argyris posited that usually when individuals are confronted with information about how to improve their situation, they may focus not on the possibility to learn but on covering up their weaknesses and/or embarrassment.

3) **Generality.** "It must be sufficiently general to be applicable to a multitude of diverse daily situations within the substantive area, not to just a specific type of situation". Glaser and Strauss suggest that in order to develop generalizable theory you must 1) select, develop, create concepts that are flexible enough to apply in a wide range of situations and 2) the theory should also be applicable to the "whole picture". This is achieved by having assortment of data from a variety of sources.

4) **Control.** "It must allow the user partial control over the structure and process of daily situations as they change through time". According to Glaser and Strauss (1967:245) control property here is underpinned by the following aspects: "1) people using the theory must be enabled to understand and analyze ongoing situational realities 2) to produce and predict change in them and 3) to predict and control consequences both for the object of change and for other parts of the total situation that will be affected". Control is achieved through control and access variables. Access variables are "social structural variables that allow, guide, and give persons access either to the controllable variables or to the people who control them" (p. 248). They also "indicate how best to enter a situation" with the least amount of disruption to said situation (p.249). The amount of control one can exert on a concept is obviously enhanced by the diversity of usage and versatility it can be applied to.

2.3.2 Case Study

"The need for case studies arise out of the desire to understand complex social phenomena" (Yin 2009:4). Case study is a research approach primarily used in qualitative research to illustrate data and convey the story that emerges from such data, in other words it, "allows investigators to retain the holistic and meaningful characteristics of real-life events" (p.4). According to Flyvebjerg (2006:222) he argues that case study research and the knowledge that results is 'central to human learning'; for the benefits to human learning because the 'context-dependent knowledge' provides an opportunity for generating basic understanding and developing it to expert knowledge. Once an opponent to case study research Hans Eyesenck (1976:224 in Flyvebjerg 2006:224) now has realized that, "sometimes we simply have to keep our eyes open and look carefully at individual cases—not in the hope of proving anything, but rather in the hope of learning something!". Yin (2009:18) provides a two-fold definition that exemplifies how case study research includes the logic of design, data collection techniques and specific approaches to data analysis.

First, "case study is an empirical inquiry that a) investigates a contemporary phenomenon in depth and within its real-life context, especially when, b) the boundaries between phenomena and context are not clearly evident".

Secondly, "the case study inquiry a) copes with the technically distinctive situation in which there will be many more variables of interest than data points and as one result, b) relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result, c) benefits from the prior development of theoretical propositions to guide data collection and analysis".

Taking a step back there are some fundamentals of case study research strategy that should be reviewed as these will demystify the presumptions that case studies are easy, ambiguous and not rigorous. There are several scholars that have done a considerable job delineating the methodological paths for the case study research approach; particularly the work of Yin (2009); Eisenhardt (1989) stand out for me, and therefore, I will mainly concentrate on their writings for the review of this subject matter.

Yin's two-fold definition outlined above has three aims to: 1) clarify the logic of design, 2) delineate data collection techniques and 3) explain specific approaches to data analysis. These three aspects of case study research allow for researchers to have clear guidelines for using the case study research approach while it provides those that use the case study to have transparency, creating trustworthiness and reliability in research. Now, of course these aspects are not achieved in all case study research conducted and thus results in perceiving it as a less credible source of data collection and analysis. Just as with many different things in life, the tool itself is inanimate it is however, how it is used and applied that affects how we feel and think about it. It is through using some of the following techniques that will continue to strengthen the approach.

One of the most important things when starting a case study, according to Yin (2009:79) is to articulate the protocol(s) (at any level of the study from the entire case, to a group or even down to a specific respondent), which, simply defined, means an outline and design of the research; how to proceed. And this contrary to grounded theory is quite detailed and thorough. The reason why the protocol is so vital to case study research is that it creates reliability through transparency of procedures and preparing the protocol, "forces you to anticipate problems" (p.82). Yin (2009:81) further outlines four aspects that should be covered in the protocol: 1) an overview of the case study project, 2) field procedures, 3) case study questions and 4) a guide for the case study report, this gives the researcher and any informed reader a roadmap for the entirety of the study, including the study's purpose and setting.

There are some similarities with case study research and grounded theory one of which is the desire to abstract concepts out of data and build theory. Both approaches recognize the substantive and formal levels in research. While grounded theory does not aim at fact finding like quantitative approaches do, it does aim through theoretical sampling and constant comparative analysis to generate theory. Case study research also aims at *developing theory* through what Yin (2009:38) calls "analytical generalization" which should not be compared to traditional quantitative statistical generalizations. "The process of building theory from case study research is a strikingly iterative process" (Eisenhardt, 1989, 546). Cases should be selected as a setting where to conduct your experiment not as "sampling units" that can be analyzed through statistical calculations. Cases can vary depending on their purpose: they can be explanatory, descriptive or exploratory but the analytical generalizations are key for connecting the data as evidence of the theory or concepts being tested.

Yin (2009:101-114) describes six sources of evidence: 1) Documentation, 2) Archival Records, 3) Interviews, 4) Direct Observation, 5) Participant observation and 6) Physical Artifacts. I will go into further detail with these under the Research methods section in this chapter. These sources of evidence are common to qualitative research, however, what is particular to case study research and Yin (2009:114-123) are the three principles for data collection that he identifies as beneficial for "establishing validity and reliability". Principle one- is concerned with using multiple sources of evidence (data), in other words triangulating the research. Yin considers Patton (2002) discussion of four different types of triangulation that considers not just the diversity of data as one potential source but also if possible having a team of researchers, the third type is theoretical triangulation and lastly, methodological triangulation. This is essentially what this study does by exploring three different R&D units, the intent it to explore emerging constructs from multiple sources in each R&D unit. A second principle-has to do with organizing and documenting the data collected; according to Yin (2009:119) the process consists of 1) the data and 2) the report. Nvivo software has

become a great aid for researchers to keep track of all their data and reporting. In grounded theory they use memoing, here Yin discusses such things as: case study notes, case study documents, tabular materials, and narratives, for example. The third and final principle outlined by Yin (2009:123) asks the researcher to create and maintain a chain of evidence from research question to report. He elaborates that the report should be at first hand sufficiently cited and full of thick description to provide enough and clear reliability. Secondly, using of the database will provide even more evidence of the proposed linkages. Thirdly, since case study approaches follow detailed protocol (reports), there should be a match between the reporting and the protocol.

The final aspect essential for understanding how to use case study research, according to Yin (2009:130-134) is having an analytic strategy. He suggests four general strategies: 1) relying on theoretical propositions, 2) developing a case description, 3) using both quantitative and qualitative data and 4) examining rival explanations. I will elaborate upon the specific strategy used in this study under Case study approach in practice below. Along the same lines of building up a strong foundation for analyzing the case study data Yin proposes five analytical techniques: 1) pattern matching, 2) explanation building 3) time-series analysis, 4) logic models and 5) cross-case synthesis, for creating clear outlines of the data and thus adding to the validity of the case study. I will delve a bit more deep into those techniques that are valuable and relevant for conducting and successfully analyzing this study.

Pattern Matching

According to Yin (2009) pattern matching logic is one of the most desirable techniques for case study analysis. This is similar to the constant comparative analysis used in grounded theory. By comparing patterns and finding like patterns “they can strengthen your “internal validity” (p.136). Yin explains several different type of patterns that can be selected for case study research, however each as pros and cons that should be considered (For a more elaboration on these see Yin 2009:136-141).

Explanation Building

A “special type” of pattern matching, explanation building, “deserves special attention”; the goal is to analyze the case study data by building an explanation about the case. Mainly relevant in explanatory case studies, comparable to the hypothesis-generation process in GT (Glaser and Strauss 1967), it focuses on “elements of explanations”, usually done by using narratives. According to Yin (2009:143) the results of an explanation technique would likely be a “series of iterations”. The following six points reflect aspects of the iterative nature of explanations:

1. Making an initial theoretical statement or an initial proposition about policy or social behavior
2. Comparing the findings of an initial case against such a statement or proposition
3. Revising the statement or proposition
4. Comparing other details of the case against the revision
5. Comparing the revision to the facts of a second , their or more cases
6. Repeating this process as many times as is needed

While in pattern matching it is beneficial for the conclusion to match the procedures and intentions explained in the protocol, here it is acceptable that new knowledge through the iterative process could not be known and therefore described in a case study protocol. Some possible issues to consider when using explanation building as an analytical technique is to that the freedom can come at a cost, meaning that the

paths to analytical insight will need to be illustrated and there could be issues with “drifting” away from the original topic of the study. However, Yin reminds us to use the three principles of creating a protocol, a case database to house your data and finally to remember to have a chain of evidence for your concepts and constructs; these will reduce the two possible issues with explanation building.

Logic models

Logic models as proposed by Yin (2009:149) are comparable to constant comparative method in grounded theory. Yin explains that “the logic model deliberately stipulates a complex chain of events over an extended period of time. The events are staged in repeated cause-effect-cause effect patterns, whereby a dependent variable at an earlier stage becomes the independent variable for the next stage”. This is comparative to what Glaser (1992) wrote with reference to coding for the constant comparative method and what was denoted as the first basic rule of grounded theory, “the conceptualization of data by the constant comparison of incident with incident and incident with concept, in order to develop categories and their properties”. Yin (2009:149-156) discusses four different types of logic models: 1) individual-level, 2) organizational-level, 3) an alternative configuration for an organization-level, and 4) program-level; particularly relevant to this study are the last three as the first one only pertains to cases that focus on one individual respondent. The differences between organization-level logic models and an alternative configuration is that traditionally logic models follow a linear sequence but in reality very seldom do accounts of phenomena show activity happening in this way. Lastly, program-level logic models are created to organize and analyze data from multiple cases. The main difference between logic models and grounded theory is that logic models begin from a deductive point while grounded theory remains inductive at first and is followed by a combination of inductive and abductive processes.

Organizing the data and presenting analysis

It is important to create detailed case write-ups for each site and while they tend to be descriptive in nature “they are central to the generation of insight” for the researcher by organizing the data and they also provide a condensed version for the reader to understand the case setting (Eisenhardt 1989:540). Narratives also help to share insights and illustrate certain aspects of the case study that should be highlighted. The literature also suggest the use of graphs, tables and figure where appropriate to help in illustrating information and comparisons of concepts and themes identified in the case study.

2.3.3 Sense-making of the Multi-Perspective Approach

Glaser and Strauss (1967) focused on making a platform for qualitative research’s validity. Back then it was not about providing a framework it was about creating a platform for a minority group of researchers. Over two decades after their revolutionary work it set the tone for qualitative research and others such as Eisenhardt (1989) were able to contribute with such pivotal work as her framework for theory building out of case study research. The preceding review of case study approach was brief and delineated basics and compared these essential bits of information to the grounded theory approach. Concluding this discussion on case study approach we can clearly relate to the strengths and weaknesses of the approach. Principally, the greatest strengths of case study research are the potential to build theory and the focus on iteration and building confidence in patterns of dependent and independent variables. By connecting the data to theory it strengthens the validity of findings. Yin points to the need of illustrating a chain of evidence to support your results. He agrees with what Eisenhardt (1989) states, “it is important to discover the underlying theoretical reasons for why the relationship exists”; as it helps to provide an “internal validity of

the findings". Another strength in case study research is that through close iteration processes one can conclude their findings to an analytical generalization.

This study is a qualitative study focusing on human interaction in organizational global and culturally dynamic networks, specifically in the R&D sector. This study is organized as action research that is grounded in a case study (at Grundfos, the case company). The case study goes through a process of sense-making that comes from the iterative hermeneutic process derived from the previously described epistemological and ontological perspectives, i.e., how I understand individuals and how I understand knowledge. Therefore, it is in the spirit of grounded theory (1967)—a spirit of discovery, that directs this study. It is a focus on giving due diligence to the data, grounded to the extant broad literature base that applies to the constructs that arise through the constant comparison of pieces of data collected from a variety of sources so as to make sure there is strength and validity in the emerging constructs.

Through a research grant the study commenced with full-access to the case company, therefore, there was no question the study would employ a case to exemplify findings. Since the phenomena in this case were not concretely outlined, it was a natural process to follow a grounded theory approach to make sense of the environment as it developed. And lastly, due to the fact that there is interaction between me, as the researcher and the case company, I wanted to access tools that are available to action researchers, such as reflexivity and the ability to co-create with the study participants.

While the primary focus is to create emergent, novel insights into new theoretical forms It is also of high importance to recognize the need that new knowledge makes sense for the organization studied; not only for their benefit but for the theory as well. For this reason we now explore action research.

2.3.4 Action Research

Action research has its roots in the works of Kurt Lewin (1946, 1948) who "was committed to the kind of science that would improve social practice" (Argyris, Putnam and Smith 1985:8). Action research is in this study reflective of Kurt Lewin's explanation described in his 1946 paper, "a *comparative* research on the conditions and effects of various forms of social action and research leading to social action" that uses "a *spiral of steps*, each of which is composed of a circle of planning, action, and fact-finding about the result of the action". In the following list Argyris et al (1985:8-9) summarize Lewin's key concepts:

1. Action research involves change experiments on real problems in social systems. It focuses on a particular problem and seeks to provide assistance.
2. Action research, like social management more generally, involves iterative cycles of identifying a problem, planning, acting and evaluating.
3. The intended change typically involves reeducation, a term that refers to changing patterns of thinking and acting that are presently well established in individuals and groups. The intended change is typically at the level of norms and values expressed in action. Effective reeducation depends on participation by clients in diagnosis and fact finding and on free choice to engage in new kinds of action.
4. Action research challenges the status quo from a perspective of democratic values. This value orientation is congruent with the requirements of effective reeducation (participation and free choice).

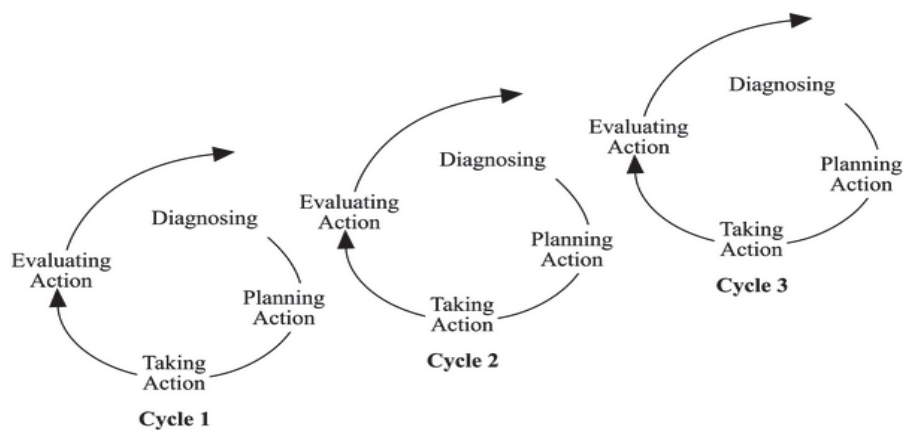
-
5. Action research is intended to contribute simultaneously to basic knowledge in social science and to social action in everyday life. High standards for developing theory and empirically testing propositions organized by theory are not to be sacrificed, nor is the relation to practice to be lost.

More thoroughly action research can be defined as a “continuous and participative learning process...to create sustainable learning capacities and give participants the option of increasing control over their situation” (Greenwood and Levin 1998:18). From a pragmatic perspective, action research can be further defined as a “researcher and client(s) engaging in collaborative cycles of planning, taking action and evaluating” (Coghlan and Brannick (2005:14).

Action research is an intervention focused on cycles of learning, immersion into the world of the participants by the researcher and a continuous learning process with specific concentration on reflection, evaluating if the new insights are indeed improving the situation. Immersion can be likened to what ethnographers call the concept of emic validity, which simply put means to understand the study participants in their context. Whitehead (2005:5) references Malinowski’s point that ethnography aimed at capturing the world of the “native” through his eyes and not our own. Borrowing from ethnography action research becomes part of the study to study the world from the perspective of the individuals enacting this world and not from their own preconceived notions. Moreover, in the case of action research specifically geared for business, it is also aimed at challenging the status quo and eliciting change processes for improvement.

The figure below represents an example of basic iterative cycles in Action Research; according to Coghlan and Brannick (2005:21) the process breaks down into the following basic steps: diagnosing, planning action, taking action and evaluation action and these steps follow cycles where the learning becomes cumulative, improving the next cycles.

Figure 4- Spiral of Action Research Cycles



Source: Coghlan and Brannick (2005:24)

The main premise with action science is, “oriented toward [the] public reflection on practice in the interests of learning” (Argyris et al 1985:35). Argyris et al (1985:36) further expanded on the positions by establishing three implications for action research’s treatment of knowledge; these are summarized below:

1. Knowledge must be designed with the human individual in mind, taking into consideration the limitations for information-seeking and processing capabilities when in context and we must be considered with how we select; condensing and reducing the complexity of choices.
2. Knowledge should be relevant to a) *forming of purposes* as well as b) *achieving of already formed purposes*.
3. Knowledge must consider the normative dimension. In generating knowledge for action, we cannot avoid responsibility for its consequences; either in creating new knowledge that changes the status quo or in affirming current knowledge for sustaining the world as it is.

Other scholars, such as those that propose appreciate inquiry (AI) (inquiry that focuses on building on what is already successful rather than what is deficient) have critiqued action research for focusing on problems. However Argyris (2009:4) counter with, “we are interested in developing neither an overpowering manipulative organization nor organizations that will “keep people happy”. Happiness, morale, and satisfaction are not going to be highly relevant guides in our discussion. Individual competence, commitment, self-responsibility, full functioning individuals, and active, viable, vital organizations will be the kinds of criteria that we will keep foremost in our minds” (Argyris 2009:4). Moreover, Ferrance (2002) adds that, “Action research is not about doing research on or about people, or finding all available information on a topic looking for the correct answers. It involves people working to improve their skills, techniques, and strategies. Action research is not about learning *why* we do certain things, but rather *how* we can do things better”.

Gummesson (2000:16) considers action research to be ‘the most demanding and far-reaching method’; Gummesson outlines ten action research characteristics from a “management perspective” that can “apply to any organization”. The table below outlines these characteristics (also in Coghlan and Brannick 2005:11-13).

Table 3- Top Ten Action Research Characteristics

Nr.	CHARACTERISTIC	EXPLANATION
1.	Action researchers take action.	Action Researchers not only observe but also participate and are expected to take action to create change towards improvements.
2.	AR always involves two goals.	The two primary aims of AR are to solve a problem and contribute to science by generating new knowledge. AR is still research; the distinction is that it is research in action.
3.	AR is interactive.	AR needs intense collaboration between the researcher and the case company (all participants). There needs to be room for adaptability and flexibility.
4.	AR aims at developing holistic understanding while recognizing complexity.	AR is able to see and understand the bigger picture while also being able to delve deep under various layers of phenomena; recognizing complexity “not because of too many details” but rather due to the multi-contextual environment; this adds to the advantages of AR.
5.	AR is fundamentally about change.	AR is about embracing change; it is applicable to the understanding, planning and implementing of change in groups, organizations and communities.
6.	AR requires an understanding of the ethical framework.	Significant attention is placed on the relationship between the researcher and the case company in the research process so that it is a clear, transparent and mutually beneficial one.
7.	AR can include all types of data gathering methods.	AR does not preclude the use of data gathering methods from traditional research; it only requires that the use of methods be planned and well thought out.
8.	AR requires a breadth of pre-understanding.	AR suggests that researchers that are well-versed in the problem, company context are the best to take on such research: here, according to the author’s, experience is crucial.
9.	AR is about researching a live case study as it unfolds.	AR is focused on the development of improvement and change however, it is also important to focus on the process that also offers learning opportunities such as periods for reflection and learning.
10.	The AR paradigm requires its own quality criteria.	AR should not be judged based on Positivistic research criteria; it would not measure up.

Source: *Coghlan and Brannick (2005:11-13)*

The reason AR is one of the three approaches being applied is because it focuses on taking action, on being out in the field, being able to observe and participate with the research, solving a problem, gaining new knowledge through the iterative processes with a purposeful use; and with its strong reflexive properties, and the ability to participate and the opportunity to co-create change.

2.3.4.1 Action Research Inquiry Skills

Coghlan and Brannick (2005:39) describe three skills that will facilitate the data collection process: pure inquiry, exploratory diagnostic inquiry and confrontive inquiry. *Pure inquiry* “prompts the story of what is

taking place” for example with simply asking, “what is going on?”. This type of inquiry asks the researcher to be able to listen carefully and neutrally. Exploratory diagnostic inquiry places the researcher in a position of discovering how the client analyzes the situation. Here the researcher explores: “emotional processes, reasoning and actions”; for example, here they would ask, “How do you feel about this?, Why do you think this happened?, What did you do?”. Confrontive inquiry takes an involved perspective and has the researcher share their perspective with the participant; “challenging others to think from a new perspective”.

2.3.4.2 Researcher Role Duality

Fulfilling responsibilities to the client as well as academia can be a difficult road to travel. It is in preparing your journey and knowing the tools, for the example the ability to reflect, that are at your disposal that can help you anticipate the obstacles that will be in your path.

2.3.4.3 The Sixth Sense in Action Research- Reflection

There has been much discussion in methodology regarding the differences between the following terminologies: reflection, reflexive, reflexivity. While I understand the differences and it would be an interesting discussion, however, for the purposes of this study I will not take up this discussion as it is irrelevant and I will use these interchangeably. Specifically with reference to the discussions found in the action research literature, reflection or reflexivity can be described as a shadow of introspection and interpretation that runs parallel the iterative cycles that we have discussed thus far. So far the literature on Action Research that I have presented above only alludes to the importance of reflection. This section will elaborate the concept and its use in practice. “Reflexivity involves a willingness to probe beyond the level of straightforward interpretation (Woolgar 1988) and to explore how these biases and characteristics affect the research process” (Bryman and Bell 2007:712). Reflection is much like double loop learning proposed by Argyris (1985) in that it asks the individual to consider the actions taken and consider these choices to evaluate if the outcome would otherwise be different and thus improved.

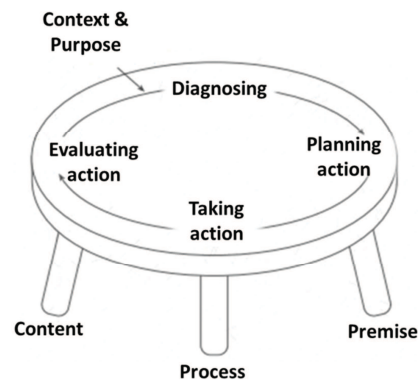
There are two aspects that make reflexivity especially important in action research. One aspect of the importance of reflection in research is the greater acknowledgment of the “role of the researcher as part and parcel of the construction of knowledge” (Bryman and Bell 2007:712); I will elaborate my role and effect as researcher later in this chapter. The other aspect of the importance of reflection in research is the ability it provides researchers to deconstruct interpretations and begin to link to other things such as context and other constructs and themes that are also revealed from the iterative cycles. Miles and Huberman (1994:66) also refer to reflective remarks that should not be omitted from the transcription of field notes, as they provide insights into the possible connections to the context, thus being able to reveal understandings for the phenomena.

According to Mezirow (1991) reflecting can be divided into three critical forms: content, process and premise.

1. Content reflections—ponder the current phenomena, e.g., what is happening?
2. Process reflections—consider strategies, procedures, and how things are being done.
3. Premise reflections—critique underlying assumptions and perspectives.

The figure below illustrates how the three critical forms of reflection provide footholds to the iterative cycles in action. Thus, this process can be compared to the abstraction of concepts in grounded theory as well as the second level in case study research.

Figure 5- Connecting Forms of Reflection to the Iterative Cycle



Source: Coghlan and Brannick (2005:26)

“The use of critical reflection in each cycle allows the action (or change or improvement or intervention) to be integrated with research (or building understanding about the process and the practice or evaluating progress or generating theory)” (Melrose 2001:166). Melrose (2001) recognizes that over time through repeating the iterative cycles in action research these cycles begin to provide learning and experiences that further develop the researcher’s ability to understand the phenomena.

Coghlan and Brannick (2005:29) surmise that a good action research study contains three main elements: a good story, rigorous reflection on the story and an extrapolation of usable knowledge or theory from the reflection on the story. Overall, these scholars outline the shift in perception regarding action research from practitioners that “merely consume knowledge” to one of practitioners as “producers and mediators of knowledge” (p.172). They state that it may not be necessary to carry out “traditional formal literature review of the field before the study begins, rather sharing interesting and relevant research as well as “interpreting and critiquing it” can serve as lessons of experience that one can take on the next action research journey. The essence of Action research is found in the practical nature of co-creating knowledge together, of learning through introspection, interpretation and reflection. “Action Research is embedded in and built on the values of the participants and on a collection of a multitude of perceptions, which themselves are value laden. Values impinge on research by guiding the selection of a problem or practice, a plan or a method of investigation, a means of analysis and interpretation, and a theory” Melrose 2001:177).

2.3.5 Research Approaches in Practice

Qualitative research is founded on the focus on individuals and how they construct and interpret the world around them. It is a focus on digging deep into these processes that makes qualitative approaches useful, unique and highly valuable. Gaining these insights, “involves a continual cycling between theory and data” (Eisenhardt 1989:549). It is through an almost constant iteration process that the complexity of the theory-

building process can be diagnosed with the aspiration of creating valid novel theory that is empirically grounded. Padgett (2008:209) identifies the importance of “interpretation of description” when she addresses the significance of interpretation being abstraction, conceptualization, and meaning-making while description is just a locating and explicating; these distinctions allows researchers to take research approaches from merely identifying concepts and themes towards the development of theory (key word is interpretation). While Eisenhardt (1989:546) made the distinction between a focus on “rich, complex description” and “development of generalizable theory”, I would like to think that it is a cyclical, inter-dependent relationship; it is through the process of creating thick, rich description of complex situation, participating in the iterative process that we arrive at the inception of generalizable theory.

Upon reflecting through the development of this study, I realized that the study was not just a case and not purely action research and not purely grounded theory; it is a mixture of all three. We could take up a discussion of whether you could indeed have a purely grounded theory approach that used cases to illustrate important concepts and/or also as purely exemplary to describe the context of the data analysis. This would however, retract from all of the key characteristics and strengths found in case study research. Just the same I could have a discussion here justifying the use of action research in this case study and omit grounded theory. However, not including all the techniques that grounded theory provides such as memo writing and the constant comparative process would be a disservice to the study. Further reflection provided yet another revelation; I realized that I could elaborate on the methodological approaches and outline methodological triangulation such as how Yin (2009:116) referencing Patton (2002) has stated (see other scholars who have suggested triangulation in qualitative research: Padgett 2008:116; Saunders et al 2003:99; Denzin and Lincoln 2005; Miles and Huberman 1994). Therefore, keeping true to the constructivist-interpretivist paradigm I have chosen to use a multi-perspective research approach combining all three of these approaches to build methodological triangulation. Of course, I am also aware that not all of them converge smoothly; these dilemmas and how I overcome them will be further explored after the table below that outlines each of the research approaches. I specifically describe how the researcher see and acts in the world; the key characteristics of the approaches; how to collect and analyze data and the expected outcomes that correspond to each approach.

Table 4- Overview of the Three Research Approaches in this Study

	How the researcher sees the world	Key Characteristics	How to collect data	How to analyze data	Expected outcome
Case study (Yin 2009; Eisenhardt 1989)	Bounded for the purposes of the research question and focal area(s)	<ul style="list-style-type: none"> Clarify logic of design Delineate data collection Explain and link analysis to data Thick Description Narratives 	Six sources of evidence: <ol style="list-style-type: none"> 1. Documentation 2. Archival records, 3. Interviews 4. Direct Observation 5. Participant observation 6. Physical artifacts 7. Actions (through participant observation) 	Four General Strategies: <ol style="list-style-type: none"> 1. Relying on theoretical propositions 2. Developing Case Description 3. Using Qualitative and Quantitative data 4. Examining Rival explanations Five Analytical Techniques: <ol style="list-style-type: none"> 1. Pattern Matching 2. Explanation Building 3. Time-Series Analysis 4. Logic Models 5. Cross-Case synthesis 	Exploratory, Explanatory and/Descriptive outcomes based on defined protocols except with the exception of explanation building analytical techniques
Action research (Lewin 1948; Argyris 1985; Coghlan & Brannick 2004)	Interaction and participation with the participants in cycles of observation, action, implementation and reflection	<ul style="list-style-type: none"> Involves Real problems, real people and real solutions Challenges the status quo Importance of reeducation 	Does not preclude traditional methods; only requires that the use of methods be planned & well thought out	Iterative cycles Access Participation Problem solving Self-reflexivity	New knowledge (fresh perspectives) Co-created solutions to practical issues
Grounded theory (Glaser & Strauss 1967; Glaser 1978; Charmaz 2003; Goulding 2002)	The context is to be explored through an inductive, exploratory perspective, letting the concepts emerge from the data	<ul style="list-style-type: none"> Theoretical Sensitivity Theoretical Sampling Theoretical Memoing Four-Step Constant Comparative Method 	Interviews, observations, incidents, events, informal conversations	Iterative process of open coding, down to selective coding Reduction/abstraction; reflexivity; theoretical sampling; memoing & constant comparative analysis.	Theory-building New knowledge

Source: Own creation based on the multi-perspective research approach

Before I move on to discussing some of the dilemmas that I have faced through using a multiple perspective approach I will explain the overall argumentation for using these approaches. As I have written before, I have realized that I have used all three approaches and it would be a disservice to omit any of them. All three approaches have the iterative process in common—of exploring for interpretation and analysis. However what can be different is the way in which they begin. Grounded theory focuses on the data outlining the framework (of course with some general boundaries as explained above), while both case study and action research have more concrete outlines. And lastly, action research sets itself apart by its focus on co-creation with the clients and implementation. While some may consider the possibility of conducting longitudinal action research the essence of action research is for the short-term; a focus on the now, on the articulation of issues for improvement in some specific areas and the initiation of change processes by way of implementation. By definition action research is not longitudinal. While there are differences, I also believe that these are not majorly conflicting. Moreover, I believe that the advantages outweigh the differences, creating synergies for the application of methodology in practice. As I will explain below, typically action research-type of meetings with clients were turned into yet more interviews (from a grounded theory perspective). In action research client meetings would be taken as facts, however grounded theory takes interview data and interprets it and continues to make sense of the data through the further collection of data. It is in seeing how the stories unfold together that tells the story of the whole not just of the parts. The remainder of this section presents five of the study's dilemmas.

*The Dilemma of data leading the study or study protocols leading the data:
Grounded theory provides heightened awareness for preconceived notions*

As it is explained under theoretical sampling, it is this focus on the data and the active phenomena that has guided my path. However, when conducting Action Research the researcher needs to listen to the participants and co-create with them; this 'data' is taken as given. The balance between listening to the data and listening to management can be a difficult road—the key for me has been to remain true to the data.

In the beginning, management placed an overemphasized importance on culture as if fixing culture would be the cure all to their organization's situation. I continued to reject this need to study culture without having a theoretical sampling linking the need to focus on the concept. It was difficult but essential to this study and the methodological underpinnings that I stay true to the data. It is especially difficult to explain to business people when at the time of the incident I had no real knowledge of the 'why' we should not focus on culture in the way in which they wanted.

Their focus on culture "as a solution" made me postpone focusing on culture based only on the arbitrary assumption, a mental "shelving" of the subject and focused instead on the data, letting it speak to me; with time it did, but in a dramatically different way than management could have anticipated. This is how the literature review on culture evolved.

Striking the balance between listening to the study's participants and listening to the data can be a difficult road; however, it is indeed in staying committed to following the data that will in qualitative research pay major dividends. Through the process of exploration I began to realize that from an Action Research perspective the participants that co-created the project also needed to be treated as elements of data—of

the evidence; this revelation allowed me to explore meetings as interviews and the memos from meetings as data that also needed to be incorporated into the coding process. This removed arbitrary “givens” from my context and instead everything became data to be explored.

The Dilemma of Boundaries in Qualitative Explorative Research: the difference between case study and grounded theory research

In this study the conceptual framework becomes what Glaser and Strauss (1967:40) call, “the core of the emerging theory”, as it emerges from the “accumulating interrelations” of the data, categories and their properties. As Glaser and Strauss (1967:45) write, I began with a partial framework of “local” concepts, that outlined general features of the study, such as I knew I would be exploring the internationalization and management of R&D activities for a Danish, multi-national pump manufacturer that is known as one of the leading companies in Denmark. This is what Glaser and Strauss (1967:45) refer to giving the researcher a “beginning foothold on his [or her] research”. They add that while this information is helpful to understand a bit about the context the problem itself has to “emerge” and “categories are more likely to be concepts about the problem itself, not its situation” (p.45). Theoretical sensitivity, conceptualize and formulate theory as it emerges from the data; a process that happens already in stage 1 of the constant comparative method, is a process that once it starts is “forever in continual development” (p.46).

Grounded theory asks the researcher to be open and not define their boundaries, explore the literature, or identify key questions; from an action research perspective and through the choice of case company I have done just that. I have stayed true to not only the essence of grounded theory but also its key properties as I have explained above. This study is indeed a journey of discovery; thus accepting the inherent uncertainty and the intellectual complexity that comes along with it.

Box 1- Comparison of Case Study case boundaries with GT “local” concepts

As Glaser and Strauss (1967:45) write, I began with a partial framework of “local” concepts, that outlined general features of the study, such as I knew I would be exploring the internationalization and management of R&D activities for a Danish, multi-national pump manufacturer that is known as one of the leading companies in Denmark. This is what Glaser and Strauss (1967:45) refer to giving the researcher a “beginning foothold on his [or her] research”. They add that while this information is helpful to understand a bit about the context the problem itself has to “emerge” and “categories are more likely to be concepts about the problem itself, not its situation”.

“Planning data collection cannot be planned in advance of the emerging theory; the emerging theory points to the next steps” (Glaser and Strauss 1967:47). Staying true to theoretical sampling I had to remain open to let the data guide me. As Goulding (2002:156) states that researchers must “be prepared to sample across several groups and possible locations before the data start to make sense and the research finds direction”. For this study I could explore three locations and I knew that these were open to me from the start but the exact planning of the field work was allowed to emerge from the data.

Cases studies on the other can usually call for more defined outline and purpose. At the very least there can be as much freedom as in grounded theory where, “An initial definition of the research question, in at least broad terms, is important in building theory from case studies” (Eisenhardt 1989: 546). However, as Yin

(2009:186-187) indicates there are three ways for a case to be “complete”, the first being an articulation of boundaries of the case and a progressive reduction of these boundaries concluding with a theoretical framework. Grounded theory’s notion of “local” concepts and what Glaser and Strauss (1967:45) refer to as a “beginning foothold” into your research (see Box 1 for a recap) can be interpreted as being case-like, however, there is a true distinction between the formal articulation specified by case study research and the overall general understanding the researcher needs to navigate in ambiguity in grounded theory approach.

At the onset of the PhD the title of the study, *Cross- Border Organization and Management of R&D Activities: The Case of Grundfos A/s* gave the first clues towards some of the “local” concepts:

- *Culture*
- *Internationalization of R&D Activities*
- *Knowledge*

Moreover, I also reference my initial meeting at Grundfos as my very first interview where the eight points (listed in the introduction) were also revealed. Some of these help to build “local” concepts, others help to build up the context. Even though Mintzberg (1979:585) outlined that it is important to approach organizational studies with as much as possible a “well-defined focus” since according to him, your focus guides your research path. It is my understanding based on the methodological underpinnings of this study that my focus above all else should be to remain true to the phenomena. I agree with Eisenhardt (1998:536) that while it is good to have a focal point to begin from it is important to recognize that they are tentative in this type of research. She clearly states, “No construct is guaranteed a place in the resultant theory, no matter how well it is measured”.

The other two ways that according to Yin (2009) make a case study “Complete” are: secondly, with exhaustive efforts in collecting relevant evidence and thirdly, that considerations for financial and time limitations have been taken and these are not the factors limiting the success of the case.

The Dilemma of Protocols: striking a balance

As discussed above, all research has limitations and boundaries, some concretely defined others developing through the study; each of the three approaches has its own considerations with regards to boundaries and limitations. The boundaries and protocols of the study are the most difficult issues with regards to a multiple perspective research approach. Textbooks are neat and life, well, life can be messy. Textbooks are meant to convey essential ideas, to inform and teach others (of what has happened in life) through condensed and organized summaries. Protocols, like books serve to organize research. Protocols are part of a case study research plan, what Yin (2009) calls the outlining and articulation of a research design/plan. The reason why the protocol is so vital to case study research is that it creates reliability through transparency of procedures and preparing the protocol, “forces you to anticipate problems” (p.82); according to Yin it should include an overview of the project, research procedures, research questions and an outline for writing the report. From a purely administrative perspective, the university requires that a PhD plan is created and approved at the onset of the study. And while it is not delimited to a specific case, it is comparable to the protocol Yin refers to. When conducting qualitative work, particularly grounded theory and action research there is only so much detail you can describe in such a write up. In the figure

below I attempt to explain via an illustration of how the three approaches measure up with regards to type of research plan and the flexibility that they allow the researcher. I added example case-approach 'best fit'; please note best fit does not mean only fit. As you will notice Action research and grounded theory also account for the mix of approaches for the given example.

Figure 6- Review of Defining Protocols and Type of Research Approach

	Type of Approach	Type of Research Plan	Examples in this Study
Rigid	Case Study	Protocol defined by the study boundaries	China R&D Unit Case <ul style="list-style-type: none"> • Large R&D Unit • Extensive Research Field Work • Clear Outline= Clear goals • Deliverable for Grundfos
	Action Research	Flexible Business-oriented Business Plan	USA R&D Unit Case <ul style="list-style-type: none"> • Small R&D Unit • Short Research Field Work • Flexible (mix of AR & GT)
Flexible	Grounded Theory	Contextual Ideas Plan but no clearly stipulated protocols as they would hinder following the data	Denmark R&D Unit Case <ul style="list-style-type: none"> • Longitudinal • Exploratory • Flexible • Mix of case study & AR in GT

Source: own creation

Constantly living with concepts and constructs floating in the mind so as not to attach them to a specific category due to the outlined boundaries of case study research is a dilemma. While grounded theory has theoretical memoing and as discussed above it does acknowledge the usefulness of "local concepts" and getting situated in the context of the situation it does not ask for such specific protocols to follow, after all, it is in the truest sense an exploration of discovery.

What I did as a researcher is that through the entire process I kept true to the data, letting it guide me; this is common for both grounded theory and case study research. I did not commit myself to the Grundfos in such a way that I could not see their situation clearly. I was accepted and embedded when I needed to be and removed myself without becoming too involved so as to remain true to my role as a researcher. More than anything this balance of going "into character" and "getting out of character" has only had a minor psychological impression on me but I strongly believe it has not affected the data in any specific way.

The point here in dealing with this dilemma was taking a step back and learning to understand the context and if the plans are doing a disservice to the study; too much organizing narrows the focus, suffocating creativity and the emergence of data would not flourish. In remaining aware of this, and making sure the data was always in focus, guiding the study, I could strike a balance between having some plans when the study called for them as a natural progression of exploration—when they made sense.

Handling the data- Insights into my coding journey

The construction of concepts and themes emerged from reflecting at the end of interview and at the end of day of interviews, and the end of each field work trip and at the completion of each case report to Grundfos. It happened after every meeting whether with the organization or with my academic advisor; at any given moment of time when curiosity and introspection met and one begins to ponder about concepts and incidents, things people said and the tones and underlying implications. This process of reflection gathering or memoing creates an intimate relationship with the data. As Padgett (2003:67) wrote that “recollections of being there” are also important in reviewing the notes and interpreting the interviews. It is true what Goulding (2002:168) writes about being close to the data that “by living and working with the data, by following the guidelines, experiencing the anxieties and eventually emerging from this to develop insights into the data and meaningful pictures, a sense of personal growth and development is achieved which has as much to do with the low periods as it has with the moments of insights and breakthroughs”.

I used my first meeting at Grundfos as my first interview, asking particularly open-ended questions. This “interview” resulted as the first springboard to developing the categories that would evolve over the course of the last four years. My open coding process entailed not just reading through transcripts to assess their “meaning” (Goulding 2002:75) I also listened to the digital recording while reading along with the transcription. I found that this technique was very helpful in concentrating on theory development rather than text the second time around. Moreover, this technique helped to make sure that the tone of the respondent was also taken into consideration. Lastly, listening to the interview brought back memories and these together with the memo of the interview/data allowed me to revisit the context more clearly.

The Dilemma of doing Multiple Cases in a multi-perspective approach

Earlier I wrote, “Essentially...this study [explores] three different R&D units, [with] the intent to explore emerging constructs from multiple measures in each R&D unit. The rationale behind the way the cases are built up is found in part in action research iterative cycles and in part by the constant comparative analysis and memoing in grounded theory. The three cases in this study are representative of R&D units and are all part of —Grundfos, the case company. Traditionally, multiple case studies use cases in different companies to compare cross-case patterns of data analysis. If I would use the cases as my starting off place they would become boundaries that limit the emergence of data. However, continuing with the prime directive of this study which is to follow the data and let theory emerge and develop, I used the cases as settings in the case company to organize the context. As Eisenhardt (1989:540) wrote that case write-ups “help researchers to cope early in the analysis process with the often enormous volume of data”. Miles and Huberman (1994:27) also point out the richness and complexity of case settings that when explored open up to sub-settings and an infinite social phenomena that are available to examine. Given the context in Grundfos R&D, it was important to organize the context to make sense of the emerging data.

It is a rather complex situation, cases act as vehicles, as the means of communicating the story that the data reveals, the iterative cycles of action research in one respect use steps to evaluate the learnings that are achieved and in another act as reflective cycles of meta-theoretical learning and abstraction, all the while grounded theory provides the essence and the tools to ground the developing theory to emergent data.

The Dilemma of doing Action Research

In reviewing Action Research I referenced Ferrance (2002) who stated that, "Action research is not about doing research on or about people, or finding all available information on a topic looking for the correct answers. It involves people working to improve their skills, techniques, and strategies. Action research is not about learning *why* we do certain things, but rather *how* we can do things better". This perspective changes from case study and grounded theory provides another view of the phenomena. In a complex context such as the one found in this study, I find it refreshing to be able to pull on a variety of views. Given the information presented in the introduction one would consider why not do the whole study as an action research study. The reason it is not the only approach being employed is because this study is more longitudinal in that it spans over four years, and runs alongside a PhD study; thus, there exists a dual purpose, not just action research. The overall results of the study are very important for the case company; they are representative of their learning processes. However, this PhD study is not entirely about quick solutions or quick learnings but rather exploring the depth of issues, connecting phenomena at several different R&D units. Therefore, the scale, depth and duration does not allow for a pure AR study. Therefore, to be completely true to the study other approaches are employed to be able to tell the most complete story.

From the start there was a lot of collaboration of what the project should be. But I retained a dual role in these discussions. I wanted to let the data, the phenomena speak to me; so much in school as well in life has taught me that usually when we are in the midst of challenges or some sort of crisis that it becomes difficult to have an overarching perspective. Perspective about opportunities, different choices and how to combine the different strengths in whatever situation you may be facing; even these sometimes become clouded over and all that we can see are the frustrations, and problems. I have used the reflection techniques to retain/gain perspective through the study, some times more successfully than others. It is about being able to 'split yourself' into two; you are in the reality of the current context but you can also begin to work on a more abstract plain of thought where you begin to question everything in the actual phenomena. This can be compared to grounded theory processes of memoing, theoretical sampling and constant comparative analysis.

Concluding Remarks

"As much as we aspire to respect complexity, we will have to simplify it somewhat. One of the critical problems that we will face is how much to simplify. The answer depends on the theoretical scheme that we develop from the data, which will guide us as to what factors are relevant and which in turn, depends on the problems being studied" (Argyris 2009:11). Grounded theory has given me such freedom and proximity to the data and the process of discovery that it feels as if the data is alive. The sense of discovery propels you, even towards the last year of your dissertation to continue passionately integrating and connecting concepts. With regards to case study research it is clear that if the aim is to build novel and valid theoretical insights that these should be substantiated with a broad theoretical base as well as empirical observations and the synthesis that comes from analyzing an exhaustive amount of data (Glaser and Strauss, Yin, Eisenhardt 1989 p. 548). Action Research has given me iterative cycles and reflexivity cycles.

2.4 Research Design & Procedures

This section describes and outlines practical tools that facilitate the understanding of the methodology of this study. Due to the complexity in a multi-perspective approach I have chosen to provide a thorough presentation of the methods. There are three primary sections. I begin with this section 2.4 called research design and procedures that outlines the purpose, chronology (documents that sequence of activities; provides a road map that is like a table of contents of the activities that formed this study) and research activities for the study. The next section 2.5 called Data Collection- “The What” focuses on explaining the three main research methods: interviews, participant observation and documents as sources of data. The third section 2.6 called Data Collection- “The How” focuses on the tools in the respective methods: coding, memo writing, and reflection.

Instrumentation

A word on instrumentation in this study. Instrumentation refers to the specific methods that are used for collecting data (this is what Yin refers to as protocol in case study research reviewed in this chapter). In essence the ‘how’ of data collection. While this study is qualitative and exploratory in nature and as such should at least begin with a loosely structured instrumentation it is necessary to be prepared. If you do not know where you want to go then how will you ever find your way? A good place to start was to identify what I wanted to explore and why. Gaining a general sense of the various and relevant contextual areas guided the framing and boundaries of the study. The following sections elaborate the specific choice of research methods and how they were applied in this study.

Levels of analysis

Another integral aspect in conducting research is identifying your primary unit of analysis as the level of analysis will also have a significant impact on how you structure your study and conduct your research. Primarily researchers follow the SOGI model (societies, organizations, groups and individuals) (Bryman and Bell 2007:69). Some research necessitates the combination of different levels. This study is an example of such research. The level of analysis of this research study is a mixed-level approach. This study deals with the organizational, group and individual levels of analysis. The overall research focus is to examine and improve collaboration processes for the internationalization of R&D Activities; this is the organizational level. However, the specific research and focus is indeed on the R&D function of the organization; this is group specific level. And lastly, this exploratory study uses the individual both as in the individual human being as well as the individual as part of the whole to explore both organizational and group levels of analysis; thus, also using the individual level of analysis. Part II of the dissertation, which includes chapters 5-7, is an example of the group level and represents the data collected to answer the overall organizational research questions. Thus, the individual R&D unit analysis is not further explored in this study as it would detract from the research questions.

2.4.1 Research Chronology

The following table below provides ‘an anchor’, a road map for outlining how activities evolved through the course of the study. The study period has been divided into five main stages of understanding. Stage 1 is an introduction to the study and the case company. Stage 2 is a period of time for understanding R&D Denmark. Stage 3 is focused on understanding R&D US and Stage 4 is focused on R&D China. The final Stage

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

5 is focused on a cumulative understanding and intense focus on developing concepts further and elaborating on the theoretical framework.

Table 5- Research Chronology showing significant activities for the PhD journey

Description	2009	2010	2011	2012	2013	2014
Stage 1- Introduction						
Introduction to Grundfos & Learning about Grundfos						
Company tours & meeting key people						
Theoretical Sampling: learning the context						
Supervising Masters Students at Aalborg University						
PhD courses: SNA; Global & Cross-cultural Management						
Stage 2- Understanding R&D Denmark						
Grundfos R&D Denmark Case						
Field work- interviews / observations/ documents						
Event: Future R&D Now (participant observation)						
Field work summary and preliminary analysis						
Reflections: making sense of Grundfos R&D						
Supervising Masters Students at Aalborg University						
PhD courses: Interviewing; Pedagogy for University Teachers; Qualitative Research Techniques						
Stage 3- Understanding R&D US						
Conference: 11th ISMD International Conference on Beyond Global Markets						
Conference: 11th IMI Annual Conference on Intercultural Relations						
Grundfos R&D US Case						
Pre-Field work preparation						
Field work- interviews / observations/ documents						
Field work summary and preliminary analysis						
Reflections: making sense of Grundfos R&D						
Seminar at Grundfos: Global Mindset						
Working paper: Development of a Global mindset						
Article: Knowledge Management as a facilitator of Cross-Cultural Communication						
Conference: 22nd IACCM: Cross-cultural Management Education & Research						
Supervising Masters Students at Aalborg University						
PhD courses: Nvivo; ISMD Doctoral Seminar on Markets & Development						
Stage 4- Understanding R&D China						
Grundfos R&D China Case						
Pre Field work preparation						
Field work- interviews / observations/ documents						
Field work summary and preliminary analysis						
Reflections: making sense of Grundfos R&D						
Stage 5- End of Substantial Field Work- start of intense conceptualizing & academic responsibilities						
Reflections: making sense of Grundfos R&D						
Foreign Study Abroad Study trip						
Reflections: making sense of Grundfos R&D						
Work on developing Network conceptualizations						
Working paper: Trust as governance in intra-firm knowledge networks: a review						
PhD courses: Research Frontiers in International Business						
Supervising Masters Students at Aalborg University						
Dissertation writing & continuous iterative cycle of analysis						
Editing & Submitting of dissertation						

2.4.2 Research Activities

This section documents the main sources of data used in this study. The following tables (have been placed in the appendix due to sheer volume) take into account the interviews, observations and documentations that formed the basis for data creation.

Interviews

There are a total of 78 interviews conducted in this study. In the appendix 2, 3 and 4 list all interviewees involved in the study, the code representative of the respondent and how many times they were interviewed. For obvious reasons regarding trust and privacy the position description will be ambiguous. The following is a list of the appendices.

- Appendix 2 represents interviews 40 interviews conducted in Denmark.
- Appendix 3 represents 8 interviews conducted in the US.
- Appendix 4 represents 30 interviews conducted in China.

Documents as sources of data

There are a total of 72 documents as sources of data in this study. Appendix 6-10 outlines the specifics including data, type, document name and description. The following is a list of the appendices.

- Appendix 5: Grundfos – General Company Information (documents 1-17)
- Appendix 6: Grundfos—Company reports & Company magazine articles (documents 18-33)
- Appendix 7: Grundfos—R&D Specific documents (documents 34-46)
- Appendix 8: Grundfos—Future R&D Now event documents (documents 47-59)
- Appendix 9: Grundfos—Secondary Data Sources & in the Media

Participant Observation

There are a total of 14 primary observations in this study. Appendix 10 outlines each of these and refers to my level of participation using Gans's classification of observational roles.

Setting

The following table presents the three R&D units involved in the study. The table further informs the reader, regarding the date of establishment of the R&D Unit, major focus areas and how many individuals I interviewed and total transcribed pages.

Table 6- R&D units used in this Study & Relevant Methodological Information

R&D UNITS	DATE ESTABLISHED	MAJOR FOCUS AREAS	# INTERVIEWED	TOTAL # OF TRANSCRIBED PAGES
GPC-SUZHOU	2005	LOCAL MARKET	25	246
GSH- SHANGHAI (CHINA HQs)	1997	CHINA FOCUS	5	38
GMA-BJERRINGBRO	1945	GLOBAL FOCUS	41	235
GPU- USA	1973	LOCAL MARKET	8	74+13
TOTAL			79	606

2.5 Data Collection- *"The What"*

In this study I used three research methods for collecting data: interviews, observations and documents; this section elaborates on each of these methods. The following section further elaborates on the tools applied in this study.

2.5.1 Interviews

This study puts the individual in focus and interviews provide a great venue for accessing the thoughts of the individual (King 2004; Goulding 2002; Kvale 1996; Bryman and Bell 2005). As such interviews were selected as the primary method of data collection. Many scholars in the qualitative literature have pointed to how interviews facilitate seeing what the respondent sees; interviews allow qualitative researchers a depth, and closeness to individuals and the data that no other type of method provides. Furthermore, it is in line and corresponding to the interpretive paradigm as well as grounded theory it is essential to allow the interviewee to provide the content of the context you as a researcher have selected to study. I also consider the context of the interviews essential for contributing to the data collected. It is with this aim in mind that the interview is constructed as a dialogue, as a conversation, exploring the interviewee's world along different key areas. It was important that it be a dialogue where interviewees feel comfortable to express their own thoughts, opinions. It was incredibly important for each person to be themselves, be comfortable and be able to tell their story.

Since the logic behind the use of interviews is to gain access to the thoughts and understandings of the individuals participating in this study, then it makes sense that interviews remain flexible; "flexibility is the single most important factor in successful qualitative interviewing" (King 2004:17). There are other just as important aspects such as listening on multiple planes and reflexivity. "Reflexivity refers to the recognition that the involvement of the researcher as an active participant in the research process shapes the nature of the process and the knowledge produced through it" (King 2004:20). The key is to remain open and let the emergent data point to important constructs. Key words here are explorative, descriptive, interpretive and dynamic. Common features of qualitative interviews is the loose structure, capturing points of interest by follow up and probing questions and for the researcher to be reflective during and after the interview (King 2004:13).

For explorative studies such as this range between unstructured and semi-structured interviews provide the tools to access the important nuances that the interviewee can provide. As Kvale (1996: 124) very clearly explains, the interview guide, "has a sequence of themes to be covered, as well as suggested questions. Yet at the same time there is an openness to changes of sequence and forms of questions in order to follow up the answers given and the stories told by the subjects." Flexibility in the interview guide is aimed at creating a comfort zone where respondents feel free to respond candidly; it becomes more of a dialogue instead of a question-and-answer drill. These type of interviews provide the researcher with a guide of important topics or focal areas but should not be followed rigidly. Again the aim is to make sure the questions are geared towards specific topics and the interview seems more like a conversation (see also Burgess 1984 and Bryman and Bell 2007:474).

When conducting interviews the literature mentions the 'thematic-dynamic dimension', where thematic is focused on research themes and dynamic is focused on the 'interpersonal relationship in the interview' for

composing and evaluating an interview guide (Kvale (1996:129). Considering the three research approaches used in this study, I found this dimension of considerable importance when conducting interviews. Striking a balance between using themes and letting the interview emerge with its own themes was key.

Another tool from the literature helpful for identifying and organizing different types of data is presented by Glaser (1998:138). Glaser outlines five different types of data: 1) baseline data that is focused on facts, 2) interpreted data that is focused on perceptions of the individuals, 3) properline data that is focused on the use of specific expressions or terms, 4) vague data that is either ambiguous intentionally or unconsciously, and 5) conceptual data that is focused on opinions or assumptions from the respondents. I have a general issue with distinguishing the difference between interpreted data and conceptual data and the only thing I can think of is that conceptual data seems to have a negative connotation. Obviously, these types are not stand alone and data can find its way into many of these categories. The aim here is to be aware of the data that you have collected, to help in building concepts and theories out of it.

2.5.1.1 Setting the Interview Scene

There are six important aspects regarding the initial set-up and context of conducting interviews: 1) gaining access, 2) understanding the language and culture, 3) deciding on how to present yourself, 4) locating informants, 5) gaining trust and 6) establishing rapport (Goulding 2002). *Access*—I was formally introduced to all R&D employees in each of the different cases and gained access as a Grundfos external employee; access was a non-issue, I even received my own Grundfos email. *Language and culture*—I have been lived in Denmark for over ten year now; this experience of culture immersion gives me keen insights, being able to traverse within several national cultures and languages. So, in instances where participants would rather speak Danish, I could understand the meaning behind the words. On the other hand, when I conducted field work in R&D China, it was quite difficult at times, seeing respondents struggling to explain something, while all I could do was smile supportively and attempt my best at understanding the context of their stories so as to not misinterpret or lead them in their responses. *Self-presentation*—I chose to be open from the start about my hybrid nature (being both seen as a PhD Fellow from Aalborg University and as an external Grundfos employee). Moreover, I also chose to present the purpose of my study as all R&D employees were 'living' the issues every day in their work life, so there was no reason to hide my purpose. It should be noted here, that while I was open about the purpose, the purpose was indeed quite abstract and general, developing through the study. *Locating informants*—Identifying key individuals that could shed light on different information, were fairly easily to find through a combination of interviews, and observations. *Gaining trust and establishing rapport*—this may seem odd, but I find that there was an initial level of trust given to me based purely on the associations with Grundfos and with the university. Another aspect of gaining trust was being present for a period of time in the company and having casual conversations and having lunch together; this way I became more approachable. Simply treating people with respect, keeping interview appointments and following up established a good rapport.

Through my Grundfos email account I was able to very easily to contact interview participants via the internal meeting booking system. I made an interview schedule and emailed meeting requests with a general introduction of myself and of the study. All interviews were conducted on Grundfos sites in typical meeting rooms where we had quiet place for the development and expansion of thoughts and meaning. In some few cases interviews were conducted in private offices. In the case company meetings are an important part of getting work done. The interviews became known interchangeably as meetings. I was fine

with the names; in the context of the organization participants appeared to want to be part of the study and help in any way they could.

Since this study is exploratory in nature I prepared for all interviews and used a ‘set of subject themes’ (Bryman & Bell 2007:479) so that the interview guides ranged from unstructured to semi-structured; remaining flexible and exploratory—letting the data guide me. These subject themes/focal areas presented in the table below, were selected from my first two meetings with Grundfos where the situation/current issues were explored, however, it is important to note that these themes remained flexible and were able to change and develop with data—as data. The table provides example of the simple questions that came from the focal areas. While we as qualitative researchers cannot help influence our study, it was nonetheless important for me not to let my presumptions bias me, so I worked on outlining my presumptions and pre-understanding of the context before I started interviewing (for an example see section 2.7.1 where I discuss what culture is for me). Writing these bias out allowed me to reconsider new ways of thinking, freeing me in some cases of incorrect presumptions. I aspired to strike a balance between focusing on the themes that seem initially pertinent to the study as well as tapping into the spontaneous and unsolicited stories that come from the interviewee. This is where interviews can get really exciting and revealing. On the other hand, it was important to remain focused on the study’s aims not to digress into other topics or issues not particularly relevant to the study; naturally the beginning of the data collection period has a wider net than the concluding periods where constructs begin to fill in and become robust. Here it was about striking a balance between working from an action research perspective that is relatively more fast paced versus working from a more deep grounded theory perspective where there is time to reflect and create.

Table 7- Example of focal areas used for Interviews & possible questions

Focal Areas	Possible interview questions
Culture	How do you define culture? & What does it mean to you? What is culture in Grundfos?
Networks	How do networks function in Grundfos? How do you use networks in Grundfos?
Leadership	What does leadership mean to you? What style of leadership do you believe works best in R&D? and why?
Knowledge sharing	How do you acquire knowledge in your work? How do you learn from your colleagues?
R&D	What is your area of expertise? & What is your role?
Globalization	In your work tasks how many R&D units/ R&D colleagues do you work with? How does working in a global context affect your work?
Innovation Intent	What is the Innovation Intent? Does the Innovation Intent affect your work?
Communication	What do you think about communication in Grundfos R&D? Are there any obstacles to communication and if so, how can they be improved?
Relationships	What type of relationships do you have with your colleagues? What defines successful relationships for you?

The interviewees were 'briefed' and 'debriefed' respectively at the beginning of and conclusion to the interview and considerations were taken with regards to the context. In other words, I was quick to adapt to the given circumstances. For instance, depending on the interviewee it was necessary for me to adapt different interviewing styles in order to gain the trust of the interviewee as well as create an environment for sharing where the interviewee could be more open and comfortable.

The interviews averaged about one hour, but depending on the topic at hand, some interviews longer while others took less time. Questions throughout the interviews were general to the context and became more specific depending on what was shared and how I was able to capture and reflect on these points. For me it was important to maintain a positive interaction and motivate respondents to share their stories; it was also important to keep the flow of the conversation smooth and comfortable; I used pauses or silence when necessary to show active listening and also to designate changes in subject or heavier questions.

It was important not to assume the answers to questions, as it was not my opinion that I needed but that of the participants; so questions were generally simple at the start in order to get their perspective on various general constructs. While in some very few cases I had to redirect the respondent into a relevant topic, overall, I made no attempt at stopping a narrative. I tried my best at following the suggestions on how to conduct successful interviews provided by the literature, e.g., being clear and gentle, open and steering, critical by not being satisfied with vague answers rather being inquisitive and asking again; remembering, connecting and interpreting (Bryman and Bell 2007:484; Kvale 1996:148-149).

Interviews never went on for more than two hours. I generally made it a point to space the interviews out in the odd chance that they would run over. I knowingly tried to schedule managers, experts or specialists and tenured respondents with wide time allotments before and after as these type of respondents tended to have a lot to say. There was also time allotted for notes, reflection and if the need should arise also some time to begin writing memos after each interview. Moreover, when I was in Bjerringbro, Denmark I used the two hour commute home (to Aalborg) on the train to continue to elaborate on the day's activities and the process of data collection. Curiosity helped break the ice at the beginning of the interview and the interviewee "became the interviewer" at the beginning of the meeting/interview. Respondents were interested in placing me in their minds; my background, why I was conducting such a study and my connection to their world, were the usual topics of discussion. Between the meeting rooms and the openness on my part sharing my background story and the purpose of this study, it provided a comfortable setting and an open environment.

"Eliciting stories", "asking clarifying questions", and guiding the interviewee on topics of interest were some of the things I did to make sure that the interview process remained a co-creation and where the interviewee felt that I was interested and sympathetic to their situation. I also practiced a combination of "active and interpretative listening" (Kvale 1996:132 and 135) that allowed me to listen to the conversation as well as listen on a more abstract plane for multiple meanings. This technique, while rusty at first, got better with practice. However, I am not concerned because in the beginning I had a wild enthusiasm and excitement about discovering that could not be satiated; every interview made me want to dig deeper and explore more avenues. And this hunger slowly became tempered through emergent data and saturation of concepts. Lastly, it was important to provide closure to the interviews with as much care as was given to the other parts of the interview. I took care not to end on a difficult topic but rather rounded the interview

off and told the respondent I had no further questions, if they had anything they would like to add or discuss. I followed by providing my email address and letting them know that they could always contact me afterwards should they think of additional comments or questions. In the very beginning I also asked if the respondent should know of anyone else in Grundfos that would either be interested in the topics and/or could be beneficial to interview; this is snowball sampling.

2.5.1.2 Handling the data

The majority of the interviews have been digitally recorded except for in two types of situations. First, if the respondent specifically said no to being recorded (as part of the beginning of the interview I always asked respondents if I could record them and why I want to, so I always gave them the option to say no) and this happened rarely. Secondly, if the situation I was in was not appropriate for recording or if me asking to record could have a chance of ruining the flow of the very conversation I wanted to record, then I would instead practice very critical active and interpretative listening and make appropriate notations. In these few cases, I would give myself time after the interviewee had left the room to revisit and summarize the interview notes before even “decompressing” from the interview. The time immediately after the interview is essential for capturing data points and for writing down aspects that were not clear for later follow-up.

For the majority of interviews that were recorded I still took notes during the interview of what I considered key points. I believe this was helpful for two reasons 1) should something happen to the digital recording I would still have initial notes to reference the interview and 2) these notes taken at the interview are very useful when listening to recordings again. It helps jog the memory and places you back at the meeting place again. From a grounded theory perspective, Glaser (1998:108) believed recording interviews would limit the researcher’s ability to capture what they was being told. I thoroughly disagree on this point in the specific context of this study. Given the organizational setting being multi-national R&D activities and the participants being knowledge workers, I believe that not only are respondents understanding to the needs of research in general they also want me to succeed as by extension I am helping them. Therefore, I find that recording interviews was welcomed and has given me the opportunity to better listen to what the respondents are sharing. I become less focused on attempting to capture the interview in notes; I became more part of the dialogue that unfolded before me instead of just a note taker. With a free mind I was able to ask follow-up and connecting questions on the spot. The literature has also acknowledged the usefulness of recordings: they “can help to recapture the actual data, which is neither the recording, nor the transcript, but the researcher’s experiences of the interview in its own context” (Spender 1989:82 in Bryman and Bell 2005:493).

At the end of each interview I made time for reflections and begin to assign codes to my notes and always if possible begin to develop memos if ideas came to me. It quickly became obvious that in order to capture developing ideas I had to do what all grounded theory agree on and that is to STOP and write. ‘Getting back’ to something would not provide the same results.

Having discussed how the data was handled during the interview now I focus on how it was handled after the interview. First the data was transcribed; transcriptions were written verbatim, organized, compiled and analyzed with Nvivo software. Other than transcribing myself, I used one other transcriber that I knew from past experience. I found that I could trust her work and felt comfortable that the transcription was true to the interview as it followed it verbatim.

However, once the next step began, that of reading through transcriptions, I quickly realized that I would need to listen while I read along. I uploaded all my digital recordings and transcriptions into Nvivo data organizing software. Here I was able to play the recording and listen to the interviews, using keyboard shortcuts to pause, rewind and fast-forward recordings. Listening while reading through the full transcription freed me from having to concentrate on capturing what they said in writing and instead I focused on the full complex meanings that were being shared. Here too I employed the STOP and WRITE technique. The Nvivo software was great for allowing for annotations and memo writing in the very same software; I was able to link memos and annotations to different interviews. Nonetheless, I found myself using the whiteboard in my office as well as regular word documents to further develop my ideas.

2.5.1.3 Sampling

“Sampling is crucial for later analysis. As much as you might want to, you cannot study everyone everywhere doing everything. Your choices—whom to look at or talk with, when, about what, and why—all place limits on the conclusions you can draw, and on how confident you and others feel about them” (Miles and Huberman 1994:27).

How were the participants selected

The sample of respondents for the interviews began with a convenience sample since the study is restricted to a specific case company and a specific function, i.e., Grundfos R&D. Having the level of access that I did, I had the freedom of exploring the formal organizational structures and identifying people of interest for interviews simply due to the relevancy of their position and responsibilities to the topic of the study. Once I began to interview participants, I also used snowball sampling as a way to make sure that I was interviewing the right people in the organization. Snowball sampling is a form of convenience sampling where you ask your initial respondents to consider others who would be relevant to interview. Snowball sampling is not ‘random’, rather it assists the researcher in identifying key respondents; in exploratory studies such as this, ‘settings have sub-settings’, thus deciding where to look may not be easy, snowball sampling helped set boundaries and a frame to the research.

Bryman and Bell (2007:500) discuss Gephart (1993) who developed a theoretical sampling method. His sample was established by selecting respondents based on the following:

- Persons and documents- choose people that are representative of the main groups involved.
- Key Issues- understand the relevant issues; those being researched and apply the new understanding you gain to the research so you can continue to develop your analysis.
- Limits- know and understand that as a researcher some things will be off limits. Acknowledge your boundaries and of those you are researching.

From a general perspective of qualitative research I have considered all three points presented above when selecting respondents.

Grounded theory. General research area and questions guide the emergent data. Emergent data through theoretical sampling provides developing patterns of constructs and themes. According to the original writings of Glaser and Strauss (1967) theoretical sampling is meant to “discover categories and their properties and to suggest the interrelationships into a theory”.

Multiple comparison groups (Similar to multiple-case sampling). The end goal here is theoretical saturation, when all new data points to the same concepts and themes.

Action Research. Sampling in action research focuses on the co-created purpose for the clients. It is further substantiated by the iterative cycles and the reflective moments, similar to grounded theory research where the aim is to discover categories and their properties and lead you to further elaborate your theory.

Case Study Research. There are two aspects of case study sampling within-case and multiple-case. The first, within-case focuses on a single case, however, it is important to keep in my that the idea of cases in qualitative research is not limited to one person, a case can represent roles, groups, organizations, programs, and cultures, for example (Miles and Huberman 1994:29). There are three key aspects of within-case sampling and they are 1) within-case sampling is “almost always nested”, in other words, exploring collaboration processes of individuals, who are R&D employees of an organization, the organization has several R&D units and these together form an R&D network. Secondly, this type of sampling must be theoretically driven such is the case in grounded theory. “Choices of informants, episodes, and interactions are being driven by a conceptual question, not by a concern for “representativeness”(p.29). Furthermore, the key is to understand the underpinnings of the construct not so much how we can generalize in other settings. The last essential consideration with regards to within-case sampling is to remember it is a iterative process. Miles and Huberman liken it to detective work, where we as researchers need to “observe, talk to people and pick up artifacts and documents” and make sense of them. These constructs lead us to new interviewees, and more observations and new documents, so begins the iterations that create patterns and develop theory. The second, multiple-case sampling is similar to the concept of multiple comparison groups discussed in grounded theory, taking singular cases and comparing and contrasting them. Multiple-case sampling provides confidence in the developing theory because by comparing and contrasting one can identify and better understand the individual case findings and through that consider generalizations based on the given context but not the larger universe.

A brief point of reflection on language, communication and potential effects on the data collection. Communicating and conducting interviews in Denmark and the US was straight forward. Having lived, worked and studied in Denmark for over 10 years provides me a keen ability to understanding not just the culture and language but also the cultural nuances that underscore the those very basic and observable aspects of the setting. Since I am originally from the US I have an understanding of North American cultural and communicative nuances, particularly specific to the East coast. However, China was a completely different and new experience. Here I will limit my discussion to how this influenced conducting interviews in China. From a purely linguistic perspective Grundfos R&D China employees are fairly decent English speakers and of course, as in any other setting, some are more proficient than others, thus some interviews had a smoother dialogue rhythm than others. Grundfos R&D China also has outlined specific language requirements for their new employees; so there is a basic working knowledge of the company’s working language. However, I should point out that I am explicitly aware that these interviews, their content and the interpretations would be more detailed, elaborate and colorful should I have been able to communicate and thoroughly understand their language—Mandarin. That said, I still believe that the data collected by way of interviews, the extended visit in China (span of over two months) provided just as valuable data by way of observations and casual discussions; being completely immersed aided in creating a full picture of the case context.

2.5.2 Participant Observation

The second type of data collection that was used in this study is *participant observation*—it can vacillate between total-participant on the one end vs. total-researcher on the other, with a blend of both (researcher-participant) through the middle of the spectrum. While interviews are a great source of first-hand accounts some kinds of data cannot be captured through interviews; the taken for granted actions and interactions, the ebb and flow of groups of people—these need to be observed over a period of time so as to capture whole and not partial phenomena. Participant observation is a form of ethnography where the researcher attempts to immerse themselves in the group being studied. In other words, it is to “participate fully in the lives and activities of subjects and thus becomes a member of their group, organization or community” (Saunders et al 2003:222). It is important here to consider keeping a distance so as not to lose yourself in the context of the group.

A key attribute of participant observations as a source of data collection is the ability to observe social settings whether formal or informal. For example, a large part of communication is unseen; capturing instances of interaction of how things are said and understood is also part of the whole. Experiencing behavior and interactions as they unfold between individuals provides researchers with a curious angle towards the participant’s world views. It is such a curious activity to observe; one can even capture behavior through observation that the very individuals being observed would not initially describe as their own. This is the difference between the image individuals portray and desire to “be” and what they “are” seen as both for themselves and with others (a case of the actual vs. the aspired). Thus, observations provide a great opportunity for capturing data in action and interaction and also the possibility to confront the actual with the aspired.

One of the main disadvantages for conducting participant observation other than ‘going native’ is *access* and underlying the issue of access is *acceptance* and *trust*. Another reason to include participant observation as one of the main research methods used in this study is given the unique opportunity of participating as an external employee within the case company; I was automatically accepted.

I will be using Gans’s (1968 in Bryman and Bell 2007:456) classification of observational roles as it is much more realistic, in that he finds there are three roles the researcher can change into depending on the given context. The three roles are defined in the table below: total participant, researcher-participant and total researcher. There is a benefit in following Gans’s typology; it is inevitable and should be recognized that researchers can adopt different roles throughout their data collection periods. I will use this typology to outline my observations and subsequent level of participation.

Table 8- Gans's (1968) Classifications of Participant Observer Roles

Observational Role	Description
Total participant	The researcher is completely involved in a certain situation and has to resume a researcher stance once the situation has unfolded and then write down notes.
Researcher-participant	The researcher participates in a situation but is only semi-involved, so they continue to function as a researcher throughout the situation.
Total researcher	The researcher only observes the situation.

Source: *Bryman & Bell (2007:456)*

Covert or Overt?

Observations can be undertaken covertly, especially when reactivity to the presence of an observer is possible. This might be deceitful but as Saunders et al., (2003:137) points out, "this approach is deceitful in a benign way," he goes on to discuss that it is acceptable because if one were to declare the observation it would cause a change in the very behavior one is to observe. I believe that my observations are not fully disclosed yet they are not completely covert in that employees are aware that I am a PhD and will only be present for a limited amount of time and a specific purpose.

The data collected by using participant observation is categorized by three different types according to Delbridge and Kirkpatrick (1994 in Saunders et al 2003:227):

- Primary- data of situations that were witnessed first-hand
- Secondary- data of situations when you ask other observers their interpretations
- Experiential- data of your perceptions and feelings of situations of your experiences

Most of my findings fall under primary and experiential data. I try not to use secondary type of observation as it might introduce conflicts making it explicit that I have observed a specific situation. When I have used it, I have introduced my questions regarding the observations in a casual and inquisitive way; heavily relaying on my role as PhD student with an emphasis on the student aspect. In addition to these three distinctions I will also categorize the observations with the following four factors:

- 1) *Events*- these are explicit activities that the company has organized that I deem to be relevant for the study.
- 2) *Incidents within events*- events tend to be large activities and thus many relevant observations can take place. Therefore, the second factor will identify these as incidents nested within events; this way they also remain in context.
- 3) *Everyday activities*- these refer to any activities from typical business day that change the researcher's eye as being relevant to the study.
- 4) *Linking observations*- these are observations that connect the individual cases, i.e., R&D units together and by nature these types of observations are more abstract and occur as an accumulation of and compilation of various bits of data.

There are three main issues concerning participant observation; ethical considerations, observer bias and observer effect. One of the major issues with participant observation is the ethical considerations that come about in your research. As a researcher I believed that full disclosure would come at the cost of my research and that is why I opted for partial and practical disclosure. Although this was a difficult choice I believe it was the correct decision. Another issue with participant observation is observer bias. As Delbridge and Kirkpatrick (1994:43 in Saunders et al 2003:230) made clear, 'because we are part of a social world we are studying we cannot detach ourselves from it, or for that matter avoid relying on our common sense knowledge and life experiences when we try to interpret it'. Especially when using an interpretive standpoint in your research such as I am in this study, it is important to acknowledge how my pre-understandings continue to influence my behavior, and decision making as well as my interpretations. I believe that only by acknowledging its influence can we as researchers actively attempt to do something about it; that is what I have attempted to do in my research. I will present some aspects of my pre-understanding under Researcher Roles and Effects at the end of this chapter. Lastly, observer effect can be a huge threat to validity and reliability of the data collected. However, in this project this was not an issue. My role as a PhD student gets me perceived as an apprentice or novice and therefore, there are no significant or long-lasting changes in employee behavior other than the natural behavior exhibited on the first couple of days when I was new in the various R&D units. Once they examined me and found me acceptable (a non-threat) then it was back to business as usual.

2.5.2.1 Participant Observation- Handling the data

As discussed above participant observation is about capturing the things you see and hear that are particularly relevant to the study area. In this study there are three distinct cases within the case company; this distinction was primarily created for organizational and sense making purposes as it is obvious that the three R&D units are thoroughly intertwined. For the purposes of data presentation and explanation as in the interviews previously discussed I will also continue to use the three cases to present the handling of the participant observations.

Secondly, I will first present the observations by using the three typologies presented in table 8; delineating my role as participant or researcher or both, the type of data whether primary, secondary or experiential. Finally, I will identify the origins of the observations whether from events, incidents nested within events, everyday activities or if it originates from a linked observation.

My archiving rhythm for participant observation follows. Firstly, it is important to take general notes on the facts of the observation. For example, simple things as the time, date, location, number of people being observed or processes and the purpose of the activity. Additionally, such things as cues, artifacts and symbols that can illustrate the context of the setting are also helpful. Secondly, I have taken notes for (memoing) the observations I have noticed. These notes are followed by reflections about the actual activity, about the activity in the context of other emergent data/themes and lastly, reflections about the activity in the greater picture of the case company and the research questions.

2.5.3 Documents as sources of Data

The third and final form of data collected is that of documents as sources of data. The level of access provided me with a unique access to all types of internal documents; fascinating for a qualitative researcher. Documents, primarily from within the organization, were collected and archived as a third and

secondary source of data collection. Aside from a document's primary purpose, e.g., consultant report on organizational structure is aimed at helping management make decisions on the future structure, documents have a secondary purpose in that they function as archival records capturing and the changes and progression of the organization through time. When using documents as sources of data it is important to keep in mind four criteria for assessing quality (Scott 1990:6 cited in Bryman and Bell 2007:554):

- *Authenticity & Credibility.* I have grouped the first two criteria as they are interrelated. Authenticity refers to the ability of a document to be "genuine" and credible. While documents can be genuine and credible, they remain subjective accounts of a particular author and of their particular focal topic or issue. It is important to keep this in mind in reviewing documents. Credibility refers to the accuracy of the document in providing informed and researched information.
- *Representativeness.* This criterion refers to the ability of a document appealing to the wider audience. As Bryman and Bell suggest authors of documents are "likely to have a particular point of view that they want to get across" (p.566) and this may inadvertently exclude some groups in the organization.
- *Meaning.* This last criterion refers to the ability of the document making sense.

Documents can be used to support or counter developing constructs, identify new constructs and/or show progression of development from past to current situations. Therefore, in addition to the above four criteria I applied the coding procedures from grounded theory and the reflexivity from action research as these are quite appropriate to what would typically be used to analyze documents. In practice I also made referencing notes as to who or where the document was acquired and if there were any other specific pieces of information to remember. It was important to keep in mind that the process of analyzing documents was also constant comparative in that the developing of constructs throughout the study called for the reevaluation of document notes as well.

2.6 Data Collection- "The How"

In qualitative research the analysis is a constant throughout the study and some would even say that it continues in the mind of the researcher long after the study report has been submitted. The proceeding section thoroughly explained and elaborated upon the three research methods used in this study. This section will further explain the following three tools: coding, memo writing and reflection have been used in connection with the three methods described above to analyze the data in this study.

2.6.1 Coding

I have introduced coding under the research approaches in this chapter. As previously reviewed coding is one of the main methods of organizing data in qualitative research and it is one of the central tenants in grounded theory approach. Coding is a process where the researcher reviews data and begins to identify aspects of the data that appear to correspond to aspects of the research area and/or research questions; in other words aspects of the data that appear to have 'theoretical significance'. According to Bryman and Bell (2007: 586) "coding in qualitative data analysis tends to be in a constant state of potential revision and fluidity. The data are treated as potential indicators of concepts and the indicators are constantly compared to see which concepts they fit best with". There is conflict in the literature regarding how much a part of the analysis coding is. Some say that coding is not analysis (Bryman and Bell 2007) but an essential aspect, others (Miles and Huberman 1994) continue to state otherwise. They state that "coding is not just something you do to get the data ready for analysis, but as we have said several times, something that

drives ongoing data collection" (p.65). They give one primary reason for having such a strong opinion and that is that coding leads to a reshaping of your perspective and when necessary the procedures you use thus adapting to the data. It is a difficult, "obsessive work". Their main point remains that the "ultimate power in field research" resides in the emergent theoretical constructs and the conceptual framework. However, to get there, structure is essential. It is important to have some structuring processes for identifying codes before one is to begin data collection activities and this structure should remain flexible in order to adapt to the emergent data. The most important aspect of organizing codes and creating a structural order is to keep track of the constant changes and reconfigurations that will undoubtedly occur.

Thus defining codes is the first step towards gaining organization and structure in the data collection process; thus increasing the ability of the researcher to be able to apply codes consistently throughout the study.

Miles and Huberman (1994:57) suggest three main types of codes: 1) descriptive, 2) interpretative and 3) patterns of codes. Descriptive codes are first-level codes: these codes tend to be one-word names, "attributing a class of phenomena to a segment of text" (p.57), and while descriptive codes entail little interpretation they are generic so that they are also contingent on the context. First-level code is a device for summarizing segments of data (p.69). Some examples can be incentives, networks, global mindset, and culture.

Interpretative codes are second-level codes. Interpretative codes are as the name suggests codes that capture the underlying subjective aspects of descriptive codes. In other words, these codes the interpretations of the first-level codes usually not identifiable in the initial cycles of coding but rather emergent later on as concepts develop further and the data become saturated.

The third class of code is the patterns of codes that refer to the further development of relationships between codes. "Pattern codes are explanatory or inferential codes, ones that identify an emergent theme, configuration, or explanation. They pull together a lot of material into more meaningful and parsimonious units of analysis. They are a sort of meta-code" (Miles and Huberman 1994:69). This "identifying of patterns" is comparable to the cluster analysis in grounded theory where the researcher compares codes, emerging constructs and themes and summarizes them into smaller groupings. According to Miles and Huberman (1994:70) there are four typical ways of summarizing the patterns that unfold: 1) themes, 2) causes/explanations, 3) relationships among people and 4) emerging constructs. Not only is it important to understand what the purpose of pattern codes are it is also important to know how to use them for analysis. Here are three ways we can use them in our research (p.70-71):

- 1) Added tentatively to the list of codes and are tried out on the next set of transcribed field notes or documents to see if they fit. Map patterns.
- 2) Next, the most promising codes to emerge from this exercise are written up in the form of a memo that expands on the significance of the code.
- 3) Pattern codes get checked out in the next wave of data collection. Inferential process- engages in if-then tactics or rival explanations.

This process is both a process of specification and generalization: "getting more explanatory power, while better defining the parameters within which that explanation will hold" (p.71).

In coding we also need to decide on the level of detail the researcher should analyze. It can vary from the particular word, to line by line coding, however, I agree with those that critique this method as the researcher will most certainly get lost in the minutia and most definitely lose contextual hold in the study. "More typically, codes get applied to larger units—sentences, monothematic "chunks" of sentences, or paragraphs, in the written-up field notes" (Miles and Huberman 1994:64). Coding "chunks" of data has been critiqued as 'fragmenting the data', resulting in a loss of contextual information (Coffey and Atkinson 1996 in Bryman and Bell 2007:592). On the contrary since qualitative research is underpinned by interpretation and the empathic nature of the researcher to infer meaning then logically if coding is a major component of this type of research why would it not be a given that when examining and coding chunks of data, it is understood that consideration has been made for contextual factors; this is after all part of the interpretation process. Another reason why some critics consider coding the loss of context is that it is difficult to retain the context of transcriptions and before digital recordings and the advance of data organizing software such as Nvivo, transcriptions and other text was all that resulted from data collection. In this study as I have previously mentioned I accessed the digital recording and had the opportunity to readily listen for contextual factors as well as identifying meaning in the transcribed word. I feel this is an improvement in traditional use of methods and enables researchers to access even more nuanced aspects of the data. For example, perhaps at the time of an interview the researcher had only limited knowledge of the respondent but after conducting many additional interviews, and developing constructs over a longer period of time, constructs suggest that perhaps the interview should be listened to again for contextual cues; the researcher is then able to listen again with greater insights into the tone applied by the respondent to specific answers regarding a certain issue in the context of the case. This is an example of the continual and developing nature of the layers of analysis in a study such as this—an exploratory, qualitative research.

What outcomes to expect from the coding process: concept generation, category generation, explanation of categories through outline of category properties, hypothesis generation based on the analysis and developing theoretical framework based on the all the previous aspects coding and note taking and reflection procedures.

2.6.2 Memo Writing

"The memo process introduces a discipline which tempers the tendency to say 'Eureka' prematurely" (Haslam 1999:58). Memo writing also known as memoing (used interchangeably in this study) is an abductive tool in qualitative research for elaborating on the data collected. Glaser (1978) defines memoing as the "theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding". Memo writing facilitates navigating through descriptive, interpretative codes as well as the development of pattern codes described above. In other words, memoing "exhausts the researcher's momentary ideation based on the data" (Glaser 1978). Memoing can be vary from a sentence, a paragraph or a few pages (Glaser 1978); furthermore, they should always reference date when created, key concepts and linked to data (Miles and Huberman 1994:73).

According to Glaser there are four basic goals with memoing (Haslam 1999:55)

1. Develop ideas
2. Have complete freedom of expression and thought

3. Create a mental bank for ideas
4. Highly sortable so you can play with interrelationships of ideas.

The literature acknowledges three basic types of memoing: *idea generation, integration and discussion*, however, only the researcher's imagination sets limitations. In qualitative, exploratory research that can seem daunting at times and where the quantity of data can seem overwhelming, memoing helps the researcher in articulating and developing the thoughts and ideas floating in their mind; memoing is "one of the most useful and powerful sense-making tools at hand" (Miles and Huberman 1994:72).

2.6.3 Reflection

Reflection is defined as the ability to give *serious thought or consideration* (Oxford Dictionary) to a specific matter. Other definitions state the ability of an individual to meditate on something. Colloquially, sayings such as, *Letting things simmer or letting things marinate...* are meant as providing for the opportunity to reflect. I don't know why these sayings are both cooking analogies but what they have in common is a necessary allotment of time for the condiments in the food to either cook together or be absorbed into the food.

There are three main "ingredients" of reflection that I have successfully applied in this study. These ingredients are: time, flexibility and the capture of moments of inspiration. The first ingredient of reflection is time; time to ponder. The second ingredient is flexibility to consider various possibilities. If one were to ponder on something but not think of it any differently than once they began their period of reflection then I have doubts of the success of reflection; so, yes, researcher's need to be able to consider different possibilities. The third and final ingredient in reflection is capture moments of inspiration. The majority of the time reflection is something that researchers do proactively. A very small percentage of the time researchers are hit my revelations. However, if you are in the midst of transcribing an interview or writing a memo for another topic, it may be difficult to follow these revelations. Capturing what I call active reflection moments in the process of developing constructs is a fantastic way to allow for insight and inspiration.

2.7 Ethical Implications & Considerations

As a researcher focusing on building theory from a multi-perspective research approach my aim has been to meet the data with as little unacknowledged bias and preconceptions as possible. My first two objectives were to 1) outline the focal areas and context of the phenomena and 2) get a grasp on my presumptions regarding these. Once I reflected upon my presumptions and began to connect with the participants I became aware and was able to expose some biases. Of course, in no way do I consider this an expunging of my biases but rather an awareness as if identifying them (the most prominent with reference to the initial contacts with the case participants) and figuratively setting them up on a mental bulletin board. It is often said that one can only acknowledge thoughts that have been stated out loud. This was my "speaker's corner" exercise and I find it was a very good exercise to make me aware of the influence some of my thoughts and conceptualizations could have on the data.

Additionally, making the case company, Grundfos, my focus helped me to maintain my focus. At the onset of the study I made a real invested effort to avoid thinking about variables, theories and their relationships;

I waited for the phenomena to divulge what the focus should be. I am not an engineer nor do I work in Grundfos, however, through this longitudinal, exploratory study I believe I was able to delve into various phenomena in three separate but intertwined R&D units to expose the emergent constructs and develop theory for collaborative improvement processes.

The following is a candid presentation of the four main aspects of ethical implication and consideration for this study: 1) the role(s) of the researcher and its effects, 2) data protection, 3) validity and 4) boundaries and limitations. I have decided to present these points as I have as they have been significant to the study and I feel this to be the best way to communicate their importance, however, it is not to say that they could not be presented in any other way. Nor should it be assumed that they are stand-alone considerations, they are indeed, interrelated and overlap in reality. Nonetheless, for the purpose of simplification and brevity I have organized them as such, they follow below.

2.7.1 The role(s) of the researcher & its effects

I believe one of the most significant critiques of qualitative research is the effect of the researcher on the study. It is difficult if not impossible to debate this point, because the literature on qualitative, explorative, inductive research exalts the very essence of the researcher being able to interpret the real life experiences of the participants; "seeing as they see". "Qualitative researchers take on the authority and responsibility to report the views of people with very different lives and views of the world" (Padgett 2003:119). "Qualitative researchers must walk in the shoes of others" (Padgett 2003:119). There is a thin line between objectivity vs. sensitivity; being able to keep enough distance to represent them fairly but still being able to pick up on subtle nuances and cues. I have discussed reflection at length, so I will not rehash the topic here, I only bring it up to reiterate the importance of its use in data collection, interpretation and analysis.

So, its strength is also its weakness, depending whom you ask. Other critiques consider qualitative research “easy” and not “rigorous enough”. I can tell you that I, the researcher, am very much embedded in the study. It is my voice you hear here in your mind when you read this text, it is fundamentally my views, thoughts and interpretations of the phenomena I have thoroughly explored, questioned, contemplated and evaluated. I can also tell you without a doubt, it has not been an easy journey and the process has been highly rigorous, indeed.

First person voice

I decided to write this study in the first person as it kept me close to the narrating and sharing of the story. Padgett (2008:202) eloquently and firmly states the importance of the researcher’s role as a key influencer in qualitative research and as such should not be ‘hidden or edited out of’ the reporting. “Moving from an external understanding to (a better approximation of) an internal one is difficult work” (Padgett 2003:119). Padgett remarks about the ability for researchers to be able to vacillate

What is culture for me?

What culture represents for people varies and the context is hugely important for understanding what culturally truly is. For me it is so incredibly difficult to understand the Cultural Dimensions depicted by Hofstede ca. 30 years ago. Even more difficult is how these types of understandings can be applied in meso and micro work relationships/dynamic when working across cultures and/or with a multi-cultural environment.

You should understand my background in order to understand my frustration. My parents are both Cuban but because of Fidel Castro and his Communist Regime in 1970 they immigrated to the United States for a better life. Eight years later I was born in the US and it would take me 32 years to set foot on the land of my parents, it would take me a lifetime to meet my Cuban family and to begin to learn the history and traditions of Cuba.

As if my cultural roots were not complicated enough I moved to Denmark in 2004 to live with my Danish husband. I have made Denmark my home, integrated a great deal; nonetheless I still naturally enact American values while never forgetting my roots although they lay pretty dormant.

Perhaps now it can begin to make sense that Cultural Dimensions would not apply to me or to my interactions. Due to globalization and the effects of reach of both the media and social networks one does not necessarily have to experience multiculturalism in this specific way to be able to experience and live in a multi-cultural way.

When dealing with meso and micro levels of interaction within organizations it is not in our benefit to delimit the interactions through these National cultural dimensions but rather explore new perspectives on how to understand culture.

between being a human investigator and an academic researcher, which entails more than just robotic or systematic processes but also psychological and social competencies such as empathy and understanding for others' situations. In other words, you are partially invested in the improvement or betterment of the participants situation and I wished to capture this with the first person approach.

Checking, not leaving, your values at the door

The next consideration of the effects of the researcher on the research is that of our preconceived presumptions, pre-understanding and underlying values. It is not about becoming or stating that one is a 'tabula rasa', it is about being aware of who you are and how you are evolving through the study and how these aspects of you are affecting the study. Just as Padgett (2003:103) writes I too made sure to consider my own values and personal opinions as well as those of the participants, keeping a keen ear open listening for these during the interviews, but also acknowledging that these "could be viewed as a source of bias that could not be fully eliminated".

Presentation and trustworthiness

Maintaining a balance between me-as-researcher and me-as-participant was an important aspect and even more important was acknowledging when I was in one role more than the other and why; this was critical for the successful and confidence completion of this study. As depicted by Gans (1968) one can indeed vacillate between total participant, researcher-participant, and total researcher. I would be confident to classify my role primarily as a total researcher and secondly as a researcher-participant. There was one moment (Future R&D Now Globalization Workshop) when I had personally felt I had crossed over to more of a participant role and while it was not a total participant role, I subsequently removed myself from further extensive involvement in participation of company activities.

Outcome Expectations

Exploratory work as in that of grounded theory can be equated to navigating in the dark and delivering on the action research iterative cycles may disillusion clients. The majority of aha moments and valuable connections are presented at the formal end of the study. This by far has been a difficult road for me in this study. At the onset of the study Grundfos presented the issue as an ambiguous one, needing exploratory investigation. But we also discussed deliverables, looking back now a quite intense and not so plausible schedule to maintain. There have been several reports and presentations for the Grundfos, however, not as it had been outlined and agreed upon from the start. Luckily, (it is not always the case), Grundfos, began to understand my role as a researcher and the process of exploration and interpretation I had embarked on and I was given the opportunity to continue unfettered by unrealistic expectations. It has been discussed that I will present overall thoughts once the dissertation is completed.

2.7.2 Data Protection

Bryman and Bell (2007:143) discuss issues regarding ethics in business research. I will address those I find particularly relevant. Data protection is a balancing act where on the one side you need to be transparent in your research but on the other side you need to protect your respondents. Specifically when conducting action research your involvement and the poor protection of individual's privacy may negatively affect their standing and relationships in the organization, the very setting you are trying to improve.

2.7.3 Validity in Qualitative Research

Validity of the data collection and analysis tend to be questioned more in qualitative research and therefore it is necessary to demonstrate an awareness and ability to adhere to high forms of validating in qualitative research. Validity aims at serving two purposes: 1) to ensure that the research methods undertaken are rigorous and account for whatever given weaknesses it may have, avoiding researcher bias issues and 2) make the previous point clear to the reader, so that if other researchers aspire to further explore and or test findings that they can (Marschan-Piekkari & Welch 2004:475-476). The following subsections briefly discuss 1) scientist in observation or participation, 2) Researcher-2-site & site-2-researcher biases and 3) triangulation.

Detached inquiry vs. help (Miles and Huberman 1994:296)

Given that I have employed the action research approach it affords me the opportunity to apply certain aspects to my research processes, e.g., iterative cycles where together with the participants we discuss and evaluate results from a case. However, first and foremost I consider myself a researcher and investigator. Therefore, aside from the brief encounters of evaluative discussion (which I also consider data in itself), I followed the following simple rules when deciding to help or remain an observer. IF helping disrupted 1) following the data, 2) staying committed to the boundaries (RQs), and 3) breached the protection of the data then I remained total researcher.

researcher-2-site & site-2-researcher biases

The work of Miles and Huberman (1994:266) on researcher effects addresses some really good points on how to deal with biases that are worth considering. Especially when conducting action research or a case study with a lot of access, there are two specific perspectives that researcher should keep in mind: 1) bias stemming from the researcher's effects on the site and 2) bias stemming from the effects of the site on the researcher. Biases stemming from the researcher's effect on the site may include but are not limited to staying too long on, influencing participants views during interviews, making yourself more important and thus the issue at hand bigger than it is. The researcher can also be effected by the site and some of these may include being blinded by one-sided perspectives, for example, that of management. Other examples may include "going native" or getting so involved you lose sight of your professional aims and replace them with those of the participants.

Triangulation

There is a definitive need to strengthen the confidence in qualitative research. Triangulating approaches, methods and research tools can do just that. As I have previously stated, I have used a multi-perspective approach incorporating grounded theory, case study and action research methods and tools to strengthen my data interpretation, data analysis and theoretical developments. While this is time consuming and has at time been, albeit it nerve-racking it has, in my opinion strengthen the findings and revelations in this study.

2.7.4 Boundaries and limitations

Outlining the reach of the study and thereby defining what will be included and what will not can become an issue for the researcher as well as the client. The combination of grounded theory and action research set the tone of the study, listening for the data to speak to me while simultaneously participating with the

case company. I as the researcher decided to seek out insights from the different research approaches and I began to see them emerge in the various contexts throughout my study. It was a difficult choice that would increase the complexity of writing the dissertation but as I wrote at the onset of this chapter, I believe that I am being true to the data and the entire study by presenting all three approaches. One could really ponder on the importance and significance of doing this, however, for me as the researcher one thing has been clear for me from the beginning and that is being true to the data; that is what I have done by making this choice for a multi-perspective representation of the data through the three approaches; ultimately this decision has set the study boundaries.

Identifying boundaries through access

Having acquired access to the degree which I need is a researcher's dream come true. Still a lot of access comes at a cost for the researcher. The researcher needs to identify boundaries of the study even though data may be enticing; the researcher needs to be responsible in how they handle the data, being sensitive to data protection. Here again I let the data guide me. For the most part there was no problem getting access to meet with specific people, or acquire the materials I inquired about. However, this level of access could have easily been a trap for the novice researcher hyped up on acquiring data and could easily have led to data overload. Keeping a focused attention on the research questions kept me from falling into this trap.

Field work & participation

When is there enough data? The environment is dynamic so one can essentially go on and on if lead by the data, therefore, the research aims and questions are there to guide and frame the boundaries of this particular study. How long is too long is the real question here and really the literature retorts with a highly ambiguous reply: when you have reached saturation. If we are to understand the fundamentals of grounded theory, case and action research and following them blindly, who knows when a study would really be over. Such ambiguity does not help in clarifying the boundaries of exploratory inductive work. In this study it was important to identify the research boundaries from the start. These started quite broad and began to take progressive shape through the course of the study. Along with the research questions and the emergent themes I identified the boundaries for the overall case and each sub case (representative of the individual R&D units). Together with theoretical sampling and the constant comparative analysis, I could identify when I had reached a significant appearance of saturation. At some points in time I would have liked to prolong engagement in field work but opted to move on. This is a point that much of the qualitative research methods literature addresses, knowing when to get out, knowing when you are starting to "go native", sympathizing and enjoying the work of the participants a bit more than normal; ultimately associating with them and feeling as part of them—this is a good time as any to respectfully return to your office at the university and conclude your field work.

2.8 Concluding remarks

The aim of this chapter has been to explain in great detail the methodological foundations for this study. And since the nature of the research questions is exploratory and the aim of this study is to gain a better understanding of the phenomena, thus the study uses in-depth qualitative methodology to produce theoretical propositions in the form of a conceptual model. However, due to its complexity this study is composed of various characteristics that make it difficult to choose only one approach and as it has been

explained above I chose a multi-perspective approach, incorporating grounded theory, case study research and action research. Denzin and Lincoln (2005:4) illustrate the importance for qualitative researchers to, “deploy a wide range of interconnected interpretative practices”, with the end goal of obtaining the best understanding of the subject matter. This has been my considerations when conducting this study and that is why the resulting integration of qualitative approaches, I believe leads to the best understanding of this study. It is important to remember that the methodology of this study is descriptive in that there will not be any new philosophical considerations that are being proposed; nor are current ones being challenged. The integration created above is not a means of pushing the envelope in advancing new forms of methodology; however, it is a means of using all the tools that are available to attain the best results for the given study.

Qualitative research is about being true to the data, it asks the researcher to be flexible, and reflexive. Scholars that support qualitative research agree that through this process the researcher’s purpose and aims should not be focused on verification but rather discovery (Goulding 2002; Bryman and Bell 2007; Napier and Nilsson 2008; Marschan-Piekkari and Welch 2004; Alvesson and Sköldberg 2005; Lincoln and Guba 1985; Miles and Huberman 1994; and Denzin and Lincoln 2005).

In this chapter the emphasis has been on clarifying the methodological stance and the approaches and methods used to explore the empirical world. I have been thorough in the qualitative literature in order to explicitly cover all the aspects that are of great significance for creating qualitative research specifically taking into consideration the advice of Birkinshaw et al (2011:579) explaining the choice of topic, the reason for the methodological stance that was undertaken. Moreover, I have been transparent about my research methods making the necessary connections to the appropriate literature. The methods are further guided by the ontological and epistemological positions described above.

Lastly, I believe that Part III of this study, namely the literature reviews for all three main components as well as the concise literature review on the internationalization of R&D activities (indicative of the context), illustrates my commitment to not only explore the empirical world but also make the necessary exploration of the extant literature so as to also consider the existing literature in my theory building; which is indeed exemplified through iteration between literature and analysis.

Chapter 3

3 Case Presentation

The following Case Presentation is divided into five major sections:

1. Grundfos A/s- General Case Summary
2. Grundfos R&D- General Summary
3. Grundfos R&D Unit Presentation- Denmark
4. Grundfos R&D Unit Presentation- US
5. Grundfos R&D Unit Presentation- China

The first two sections above will present general information with regards to Grundfos and Grundfos R&D. However, the remaining sections specifically presenting the R&D units, these sections will be infused with excerpts from both interviews and documents in order to present a story alive with participant's memories and experiences.

3.1 Grundfos A/s- General Case Summary

Established in 1945 by the late Poul Due Jensen, Grundfos was first formally known as "Bjerringbro Pressestøberi og Maskinfabrik" (Bjerringbro Die-Casting and Machine Factory), undergoing several changes until 1967 when the name was changed to Grundfos.

Today the Grundfos Group, a Danish company, privately-owned by the Poul Due Jensen Foundation. The Poul Due Jensen Foundation was established in 1975 when the Grundfos founder, Poul Due Jensen, decided to transfer his ownership of the Grundfos companies to the foundation. Today, the foundation owns 87.6 percent of Grundfos. The Due Jensen family owns 10.6 percent and the employees own 1.8 percent. The Foundation not only bears the name of the founder; as the responsible owner, it also lives out his vision for the continuation and development of the company.³

Table 9- Grundfos' Mission

THE MISSION

"Our objective is to be a global leader within advanced pump solutions and a trendsetter within water technology. We want to contribute to the world becoming more sustainable by developing ground-breaking technologies that will improve people's quality of life and show consideration for our planet. We want to make a difference. In the long term, this is only possible if we continue to make money and create growth in collaboration with our customers" (Grundfos Annual Report 2012: 8).

³ Information is based on the 2012 Annual Report.

Grundfos Group today is a leader in the international pump manufacturer business, primarily in the B2B market. Grundfos focuses on three main business areas: building services, industry and water utility with a special focus on HVAC OEM projects. Grundfos has always been driven by the pursuit of technology and innovation, always reinvesting a substantial portion of their profits back into research and technology. The company's history and pride in high quality as well as quality contributions to the markets they cater to is evident by the company's continued push for high standards of excellence through continuous demand for high quality regardless of their growth.

The Grundfos Group is represented by companies in all parts of the world. In addition, Grundfos products are merchandised by distributors in a large number of countries. Currently, the Grundfos Group is represented by over 17,600⁴ employees represented by 82 companies in 45 countries. The pumps are manufactured by Group production companies in 14 countries i.e., Brazil, China, Denmark, Finland, France, Germany, Hungary, Italy, Switzerland, Taiwan, United Kingdom and the United States.

Table 10- Grundfos' Vision

THE GRUNDFOS VISION

The future we are striving for - is one where:

- Our customers acknowledge us as the leading producer and partner when it comes to high-quality pumps - both in terms of performance and the environment.
- Our employees thrive and demonstrate their satisfaction because their jobs and working conditions provide them with great opportunities for professional and personal growth and development. In addition, their satisfaction stems from a good work environment that takes the individual's wishes and qualifications into consideration.
- The rest of society recognizes and regards Grundfos with respect as a result of our responsible conduct in relation to the laws of our society, the principles of democracy, local traditions and the environment - as well as our relations to the people whose lives and circumstances we touch.

"The Group's turnover and financial position continue to develop satisfactorily despite markets experiencing difficulties. Grundfos has been able to continue to grow through the difficult times by focusing on increasing turnover, streamlining the organization and conquering market shares throughout the year.

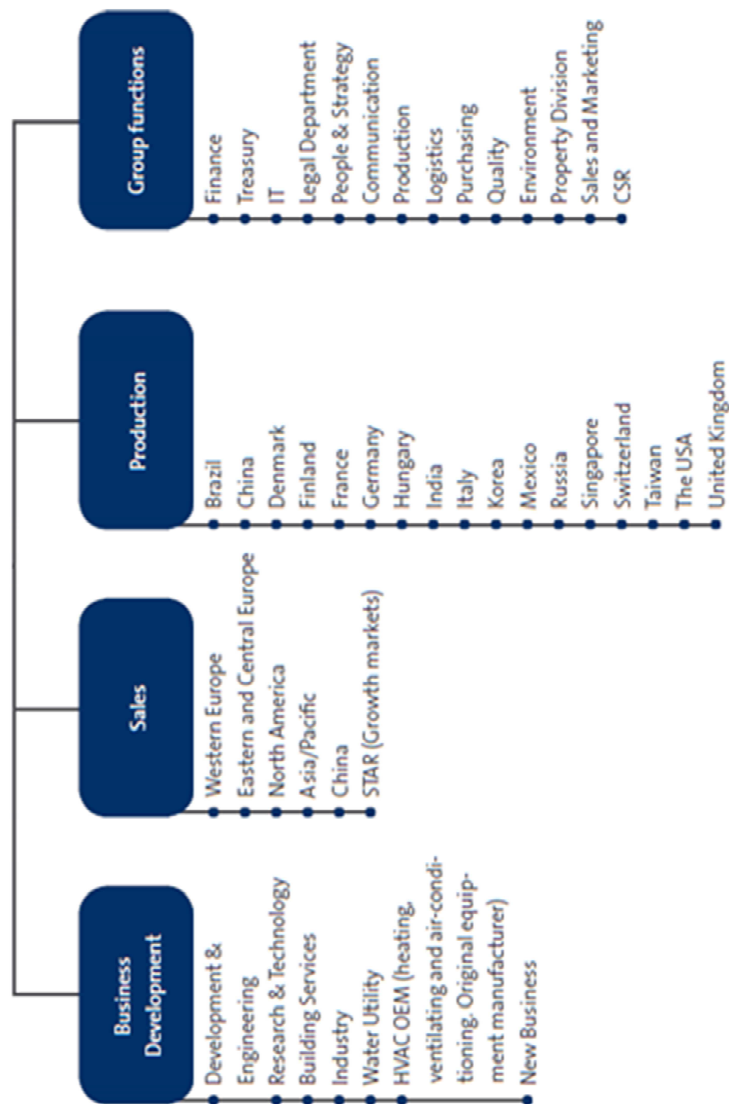
Expectations for the year have been met: Turnover increased by 6.7 per cent to DKK 22.6bn. The 2012 profit before tax was DKK 1.9bn. At the same time, product development continues. R&D costs amounted to DKK 1.4bn as against DKK 1.2bn the year before".⁵

⁴ Figures are based on the 2011 Annual Report.

⁵ Figures are based on the 2012 Annual Report.

As illustrated in the figure below Grundfos is organized as a group with independent companies for Sales, Production and Business Development with unifying group functions to sustain all three areas within the Grundfos Group. R&D is organized under Business Development and is further divided into two separate departments (this will be elaborated in the next section).

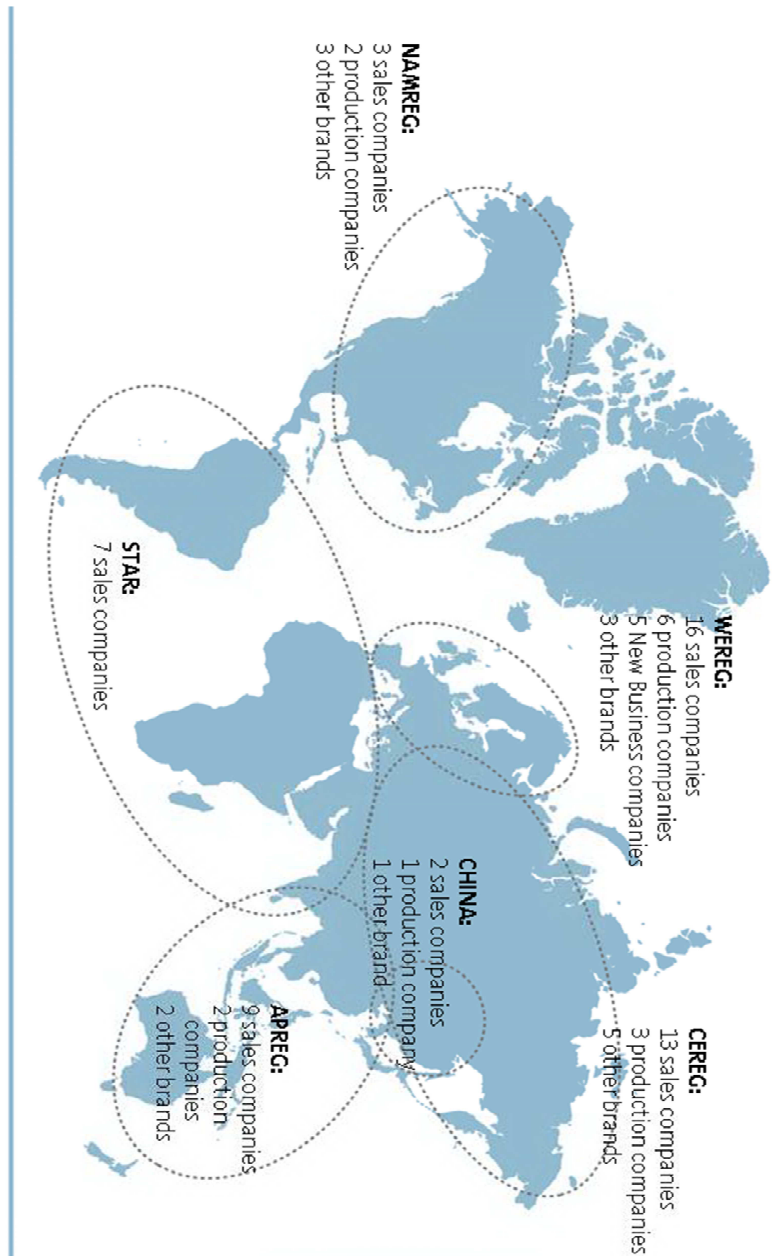
Figure 7- Grundfos Group Organizational Structure



Source: Grundfos Annual report 2008

Figure 8 below illustrates the six business regions listed under sales in figure 7 above.

Figure 8- Grundfos Group Six Business Regions/Segments



Source: Grundfos Introduction Presentation- Spring 2009

3.1.1 Grundfos Values

The above strategy can be summarized with the presentation of the following motto: Be, Think, Innovate. Upon further elaboration we understand the three words to mean, being responsible as a foundation for the work Grundfos does, Thinking ahead, makes it possible and Innovation is the essence for continued creativity. The figure below represents the Grundfos value wheel.

Figure 9- Grundfos Value Wheel



Source: Grundfos Sustainability Report- Spring 2006

3.1.2 Group Strategy 2009

Grundfos Group's Strategy is a five year plan and is structured around five overall strategic themes: 1) structural fit, 2) truly global, 3) business differentiation, 4) innovation intent and 5) great people (Group Strategy 2009).

Structural Fit

"We wish to abandon the concept of management entities being equal to legal entities. Structural Fit is about reconfiguring our organizational structures to arrive at the optimal mix of market strength and cost effectiveness. The theme can be summed up in three parts:

- Linkage: A structure that fits our current strategy of cross-national sales efforts, global supply chains, etc.
- Fitness: A structure that is fit, efficient, lean and up-to-speed
- Evolution: An agile and scalable structure that is fit for future change"

Truly Global

"Globalization is a matter of both growth and gaining efficiencies. In a truly global organization people with critical skills and knowledge are wherever they are needed- virtually or physically. A truly global organization is close to its customers. It's people work together across borders, time zones, and cultures as naturally as working under the same roof. Centralization vs. decentralization is not an issue since there is no geographical center in a truly global organization".

Business Differentiation

"Business Differentiation starts with acknowledging that different market and customer segments have different needs and therefore should be treated differently. As a result, the organization must have a differentiated approach in terms of products, solutions, competences, business models, etc., to suit the three value chains: Direct sales (e.g. contractors, OEMs, major end-users), Project sales (e.g. new treatment plants, large-scale building complexes, sports venues) and Distribution sales (e.g. wholesalers, distributors, dealers)".

Innovation Intent

"This theme is about the steps to take during this strategic period to realize the 2025 dream set out via the Innovation Intent. Innovation platforms that address user needs or problems must define the direction for future innovation, ensure anchoring and progress, and help to prioritize and focus. A critical aspect of realizing the Innovation Intent is developing and nurturing an organizational environment where radical and incremental innovation go hand in hand and where we external expertise can be a valuable supplement to intra-organizational capabilities. We must serve as a role model when it comes to energy consumption and sustainability in general".

Great People

"This theme stands for "the best people in the market within their individual field of competence, reflecting their knowledge, experience, values, personal skills, approach, etc. The Theme refers to great leadership in a strategic context and to competence development...the ultimate goal is to leverage the best people as drivers for realizing the Group Strategy and Innovation Intent while acknowledging that all Grundfos employees are needed to make strategic change happen".

3.1.3 Grundfos Future Ambitions – Innovation Intent

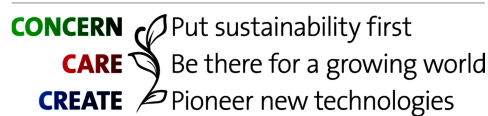
"We must develop an organization where we are working together worldwide in a global human web of relations and with a shared working culture- as if we were sitting under the same roof" (Grundfos Strategy).

2008 saw the initiation and launch of the Innovation Intent and the introduction of a new Group strategy process. “The Innovation Intent represents a change of mindset”. The Innovation Intent is a white paper focusing on the future of Grundfos. The Innovation intent condenses the global challenges to a form that can guide Grundfos in developing the organization towards 2025.

“Our Innovation Intent is to put sustainability first, be there for a growing world and pioneer new technologies”.

The figure below illustrates the three challenges major challenges Grundfos is facing.

Figure 10- Innovation Intent Motto



Source: *Innovation Intent White Paper*

The first challenge is putting sustainability first and deals with making Grundfos a “leading green company”. The second challenge focuses on being there for a “growing world”, in other words it is about helping the growing populations in emerging markets while securing the company’s future through market growth. According to management, the challenge is “to provide more comfort to more people at less cost to the environment”. The third challenge “pioneer new technologies” focuses on “creating solutions the world has never seen before”. The last challenge focuses on expanding into “new categories and areas using our technologies in new and creative ways with our customers’ needs as the starting point”.

The Innovation intent was designed to depict a story of Grundfos’ future in 2025 and a plausible projection for success by tracking these ‘three must win battles’:

- Ensure that the core business is well supported with new technologies and concepts
- Develop the technologies and concepts that will support the Innovation Intent
- Build a global network organization with global access to world-class competences

The Grundfos Dream for 2025 explores a Grundfos where:

- They employ 75,000 people
- 50% of the growth is coming from technology platforms that were not invented in 2007
- 1/3 of the turnover comes from other products than pumps
- Still no.1 in circulators and a specialist in sustainable solutions for housing
- Specialists in selling directly to end-users within selected industrial segments and utilities
- Gravitate around local centers of excellence tapping into knowledge bases
- Experts in translating user needs into new products and business concepts
- The first choice workplace for the best and brightest

The Innovation Intent also outlined innovation platforms, “that will define the direction for future innovation and help Grundfos prioritize investment and focus”. Innovation platforms all share the following three characteristics:

- Address customer needs or problems
- Apply across the organization
- Aim at meeting all three challenges presented in the Innovation Intent

Innovation Platform# 1- Be there for future homes and living in China

Innovation Platform# 2- Create viable water solutions for the poorest

As Carsten himself writes, “Our Innovation Intent gives us a shared sense of purpose and a common direction towards the tomorrow that we want to create”. Together with other strategic objectives it is obvious even to an outsider as myself that even today 65 years after it was established a passion for innovation drive technological advancements that continue to lead Grundfos.

3.2 Grundfos R&D- General Summary

The R&D function of Grundfos Group is housed under the first of the four organizations shown in the figure above, Business Development. R&D activities are conducting through project teams. Projects go through a development process (DP). DP process involves 7 steps: DP1- idea, DP2- pre-study, DP3- Concept, DP4- Development, DP5- Preparation, DP6- Production Start-up and DP7- Sales.

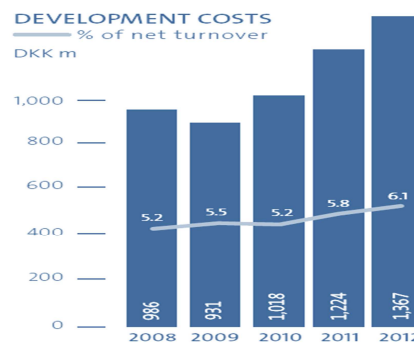
3.2.1 R&D Brief History

Much of the time between the mid-to-late 80’s and the 90’s was used to establish areas of competence and specialization for Grundfos. In 1985, Grundfos established its own Electronics production and in 1991, Grundfos Electronics was inaugurated, including a Hybrid Factory with clean room production. In May 1990, the Grundfos Technology Center was inaugurated in Denmark. This Center was established to ensure that Grundfos can always have sufficient capacity to maintain and expand its leading position with regards to vital aspects of research in new materials, development of process technology and construction of advanced production equipment and machines. In 1993, Development, Design and Product Management moved into a newly built Innovation Center. 1999 marked the first step towards the internationalization of Grundfos R&D process starting with India. Grundfos bought a local Indian software company in New Delhi, in order to support its R&D activities and to look after the development of embedded pump software and PC software. The main motives behind this move were the potential cost savings and availability of qualified IT personnel in India. Despite the initial problems, the current R&D facility in New Delhi is running smoothly with twenty employees. As previously mentioned at the onset of the introduction in Chapter 1, after the office in India, Grundfos R&D expanded to Finland in 1999, in Hungary in 2001 and in 2006 in the US, China, and Germany.

Grundfos attaches great importance to R&D therefore, in order to maintain a leading position, there is a need to continuously re-invest profits back into R&D. The figure below indicates consistent investment trends with R&D costs amounted to DKK 1.2bn, which corresponds to a 14% increase compared with 2011.

Total Group costs of product development amounted to DKK 1.4bn in 2012 as against DKK 1.2bn in 2011. In comparison with the turnover, these costs amounted to 6.1% in 2012 as against 5.8% in 2011. Over the past years, total product development costs have amounted to 5 to 6% of Group turnover. This illustrates Grundfos' intent in continuing to focus on R&D; a manufacturing company led by innovations in technology. The spike in recent years is consistent to the goals for globalizing R&D units and creating a global network.

Figure 11- Grundfos R&D Costs 2008-2012



Source: Annual Report 2012

Currently, Grundfos is focusing on strengthening its R&D facilities in China and Hungary. Part of this strategy is to attract the best engineering talent in China and some of these engineers will be selected for training in Danish universities. Once these engineers graduate, they will be posted in the Chinese R&D facility.

3.2.1.1 Grundfos R&D- Internationalization

The following is a narrative from one of the manager interviews I conducted that clearly explains Grundfos' needs for expanding R&D activities.

*“If you step back to 2004 and say that you were in management or on the board of directors for Grundfos and you’ve decided to roll development activities out of Europe and first things you might ask is why would you do that. There are lots of reasons why:
I will just name a couple:*

1) for continuous growth necessary to go out of DK: When you look at Denmark and Jutland and you look at how many development engineers they have in R&D and you look at the population around 6 million for the whole country and you start asking where can I get resources if I need to continue to grow in the next 20 years. It is problematic for them. Well, I have got all the best resources and am competing with Vestas and Danfoss and some of these other good Danish companies so we have pretty much covered the market of all good resources that are in this country. So they had to start looking at other countries and places to have resources.

2) USA focus: The US is the Odd duck out of the rest of the world from many perspectives when you talking about engineering and manufacturing pumps because the voltages and the

frequencies and the approval agencies and the way you have federal state and local government control over various aspects of it are not all necessarily in alignment with each other... then when you engineer and design things it becomes frustrating for people. So it made just logical sense just to have a development group in this region to compete against the local pump companies.

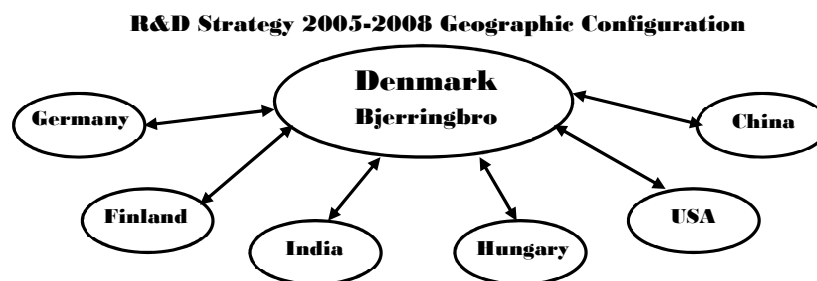
And the other piece of the puzzle is from a pump stand point this is still the biggest pump market in the world. In the history of Grundfos it was not such a big issue before because there was still an opportunity to grow through the EU and especially in Western Europe (possible market saturation at this point so Grundfos turned their focus towards US but they recognize it is short-lived. That the focus will soon be China.

3) China focus: (roughly ten years from now China will be the biggest pump market in the world.) So it is time to get positioned and be ready for that boom when it happens.

So this is the background why they decided to decentralize and globalize the R&D efforts. (Three main reasons- Business opportunities, access to a pool of good resources and the lack of new knowledge base in DK)” (USA006, DK)

In 2005 R&D began to work on how to create a Global R&D. The vision in 2005 was “Centrally driven, global approach—with local presence”. Strategic focus was aimed at internationalizing four R&D processes: technology, concept studies, product development and engineering.

Figure 12- Grundfos R&D Configuration 2005-2008



Source: Preliminary sketch based on meeting with Stefan and Poul on 5/5/09

The above figure illustrates the global distribution of Grundfos' R&D units before the restructuring in 2008.

3.2.2 Grundfos Business Development- New Structure

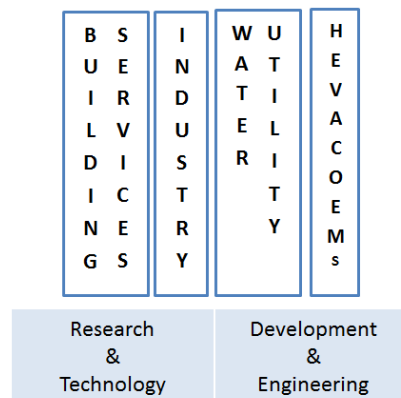
In order to respond to continuous growth, to be better prepared to handle new market challenges in 2008 Grundfos revamped the organization's structure to achieve greater process efficiency and minimize overlapping of similar work. This had an automatic effect on how of the Business Development (BD) organization, how R&D would collaborate through the product development process. Before the restructuring all business areas⁶ had their own R&D departments to specialize their customers' needs.

⁶ There are four main business areas: building services, industry, water utility and HEVAC OEMs.

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

While this had obvious benefits it had greater disadvantages such as overlapping of departments and waste of resources such as time and money. Moreover, there could be situations where a development was achieved in one business area that could possibly benefit the others, however, with the division of knowledge it might have been difficult to share or communicate advances in technology and innovations. Therefore, a restructuring was implemented to focus more on product and market segmentation instead of starting from research and general conceptualizations.

Figure 13- Restructured R&D Process



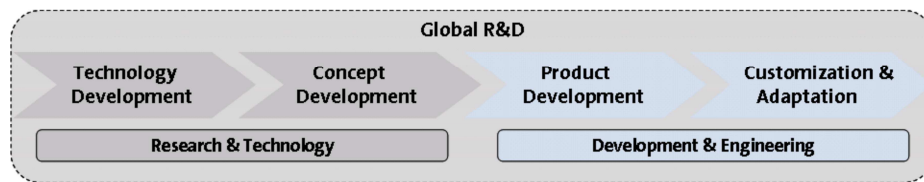
The business areas in the figure above are elaborated into the following seven areas and are based on customer groups and product applications:

1. Building Services
 - a. DBS (Domestic Building Services)
 - b. CBS (Commercial Building Services)
2. Industry
 - a. IEM (Industrial End user Market)
 - b. Dosing
3. Water Utility
 - a. WS (Water services)
 - b. WW (Waste Water)
4. OEM (Original Equipment Manufacturers)

Introduction of the New R&D- R&T and D&E

Figure 14 illustrates the change from traditional R&D that now is separated to create two departments: Research & Technology (R&T) and Development & Engineering (D&E) with their own specific focus. R&D has the reputation of being caught between attempting to research innovative future technologies but that at the same time having the pressure to deliver on continuous development. This change in restructuring alleviated the never-ending battle for priority and focus.

Figure 14- Grundfos R&D Process through Research & Technology and Development & Engineering



Source: (Grundfos BD, February 2009)

Now R&T's priority is to focus on technological and conceptual developments, while D&E's priority is to improve on product development and focus on adapting and customizing products for customer's and market needs.

The overall concept is aimed at aligning Global R&D with product segments. The idea is that all R&D units are connected in a network that share knowledge about current projects and current and future market needs to be able to respond more quickly by being able to preempt the needs of the market.

3.2.3 Global R&D Focus

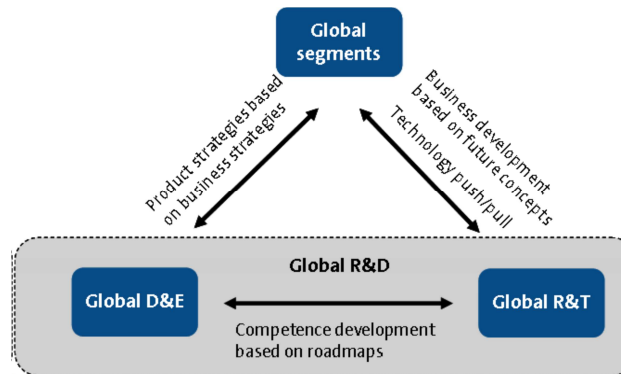
After the restructuring in 2008 the focus for R&D was aimed more towards a Global Network of R&D units.

With regards to R&D the Business Development (BD) organization embarked on a more explicit Global trajectory. This clear change in direction focuses on four main areas:

- Further develop new technologies that can be applied to future product offerings
- Continue to develop the current market position by strengthening current products and introducing new offerings
- Seek and mature business development opportunities
- Provide market intelligence in support of planning, development and general decision-making for strategic direction

Bjerringbro, Denmark is the physical location for Grundfos headquarters, however, from an R&D perspective the ambition was the creation of a Global R&D Network where R&D activities, R&D employees, knowledge and information would flow throughout the units where needed. Figure 15 below highlights how the new structure would improve business developments through the specialized focus on the divide between R&T and D&E.

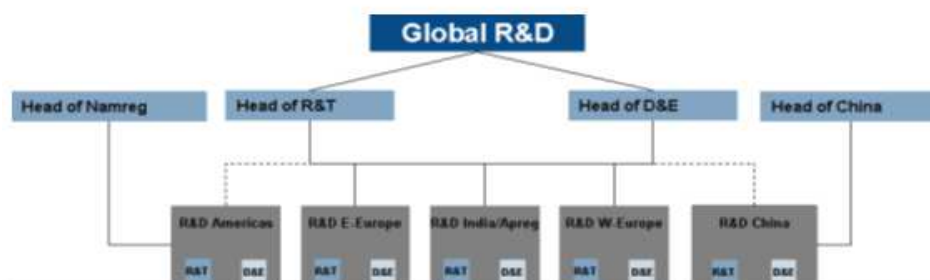
Figure 15- Grundfos R&D Alignment with Product Segments



Source: (Grundfos BD, February 2009)

Figure 15 illustrates the aspired structure of Global R&D. Currently the division between R&T and D&E is only found in its full version in Denmark (Grundfos Headquarters). The box called Global segments refers to the business regions illustrated in figure 8 above.

Figure 16- The (Aspired) Grundfos Global R&D Structure



Source: (Grundfos BD, February 2009)

At the time of this study the BD organization focused their Global R&D initiatives on five out of the six business regions/segments (see figure 16 above). The aim is that with time the R&D units in the various regions will grow to meet the market demand and therefore the R&T and D&E departments would naturally develop.

3.2.4 Global R&D- Main Strategic Elements

In keeping in line with Grundfos' passion for innovation, the BD organization that houses Global R&D uses the Innovation Intent as a foundation for their mission, "...it is our mission to enable and realize our Innovation Intent through market driven business development based on differentiated technologies, products and businesses" (BD Organization Report February 2009). This is further substantiated by the vision described in the table below.

Table 11- The R&D Vision

The R&D Vision
<ul style="list-style-type: none">• Business differentiation through sustainable technology• High performance development and engineering• Excellent project execution• High-tech low-cost solutions• World-class competences & great people• Global R&D culture working in networks in & outside the frame of Grundfos

Source: (Grundfos BD, February 2009)

From a global perspective the division of R&D into R&T and D&E will further allow for specialization. From a research and technology perspective there are three must win battles:

1. Ensure that the core business is well supported with new technologies and concepts
2. Develop the technologies and concepts that will support the Innovation Intent
3. Build a global network organization with global access to world-class competences

Development and Engineering will focus on aligning with the business strategies focusing on sustainable global product development, engineering and product customization that focus on customer needs and are fast to market.

3.2.5 Global Program and Global Project Management

In order to facilitate the ambitions of Grundfos Global R&D, there are two new functions under D&E: 1) Global Program Management and Global Project Management (the information in this section is referenced from several documents: Presentation of the New BD Structure PowerPoint Presentation May 2008; Presentation of Structure and Organization June 2008; Business Development Organization Report February 2009).

Global Program Management aims to focus on developing global product strategies and create the global overview of the major product groups. Furthermore, they will coordinate the global product strategies with the regional product strategies; thus aligning Grundfos Group's strategies, tasks and supporting the business areas and business regions.

Global Project Management focuses on coordinating competencies for successful project execution. This includes focus on facilitating an efficient project development process (DP), attracting and maintaining highly talented people, and auditing projects.

Both Global Program and Project Management are housed in Bjerringbro, Denmark. The following excerpt further explains the relationship between both functions.

"We have the regions where we have daily sales and then we have four business segments: industry, building services and water utilities and HVAC OEM.

We have program management where we have the product managers and we have the project management where we have the project managers and the segments. They will go out into the regions to make sure that they have a good understanding of what is

needed in the market and they have business development plans about what they are going to [focus on] in the future.

Based on their [understanding] the program management will make an aligned road map where they try to cover all the needs for the different segments and in the priorities that they get from the strategy. Based on that, the product managers would make this 'two pager' and bring it to BD management for yes or no. If they get yes and the budget is allocated then the project manager would be asked to start the project.

*Project management is more or less only executing what the other people decide.”
(DK007)*

3.3 Grundfos R&D Unit – Denmark

At the start of this study in 2009 Denmark was beginning to feel the effects of the financial crisis. Companies like Grundfos had to let go of many employees. Still, Grundfos was still moving forward with globalization of R&D activities and the ambitions outlined in the Innovation Intent. As stated previously there were many reasons for internationalizing and now Grundfos R&D found it necessary to further improve the organization of their R&D. The tumultuous time filled with uncertainty did not deter Grundfos from their focus on expansion. They acknowledged market needs as well as the needs Grundfos has to be able to meet to compete in the future.

This unit's case presentation focuses on globalization of R&D activities, and the revitalization of employee morale through two company driven initiatives. This first initiative I will discuss is Future R&D Now Project and the second is the creation of Competence Networks. Before presenting these initiatives I will present some of the key aspects of the context and culture of Grundfos R&D Denmark.

3.3.1 Context & Culture

Grundfos R&D Denmark is housed in one main building named Business Development Center (BD for short), which is composed of 3 floors with close to 700 R&D employees; many of them have been with Grundfos for over 10 years or more. The Danish culture has a strong influence on the R&D unit, mostly observable through the egalitarian nature of the organization. The work spaces are open and quite, while it is welcoming it is also a modern professional environment. Grundfos R&D is a network-based organization with strong focus on autonomy and self-leadership. For this reason as well as how the organization is structured through matrices and networks, it automatically sets meetings as the foremost method of working on the completion of tasks. Employee enthusiasm is palpable whenever you are in the BD building, in other words, there is an urgency felt in how individuals go about their business; going to this meeting and discussing these issues and meeting with others to discuss this project, checking emails on their phone as they walk from one meeting to a web conference. One also observes determined concentration at the various departments through studying drawings, or deliberating with colleagues on materials and processes, much of this happens in low tones of voice as there is a professional atmosphere.

3.3.2 Globalization in R&D

Before I introduce both of the initiatives mentioned above, I believe that more contextual information is necessary regarding the current globalization of R&D activities.

From figure 12 above and from the 2005 R&D vision ("Centrally driven, global approach—with local presence") it was clear that Grundfos had had little reason to consider further expanding and reorganizing R&D activities. And as the literature review on the internationalization of R&D activities in Chapter 8 will show, internationalizing R&D is just not something that most companies did. In fact, managerially speaking there are considerable issues with losing knowledge/ competitive advantage when internationalizing R&D activities outside of the home market/headquarters. From an employee perspective there were fears of job loss as well.

Generally, Grundfos has also been known for doing everything in-house. There have been considerable hurdles that needed to be surpassed before even feeling comfort with the idea of

taking what Grundfos considers their most prized possession from arm's length. However, a change in market demands transformed what was "centrally-driven" with a "local presence" towards a *network-driven collaborative approach*. With these changes in mind, in 2004 Grundfos R&D established an R&D unit in the US and in 2005 they found it suitable to establish an R&D unit in China.

In 2009 Grundfos R&D management team created a strategy map for further developing objectives into initiatives. There were three primary objectives: 1) to develop and implement Portfolio management tool for cross-organizational prioritization, 2) to develop and implement global R&D networks to capture the value of globalization and 3) to develop and implement Future R&D Now (R&D Strategy Map PowerPoint Presentation July 2009). In the midst of all the change both internally as well as externally Grundfos R&D were motivated to create initiatives that would further propel the organization towards its global ambitions in keeping with the Innovation Intent and globalization while revitalizing, motivating employees. The next two sections will present a more in depth account of both initiatives.

3.3.3 Future R&D Now

The Future R&D Now project's aim was two-fold: 1) revitalize employee morale and 2) refocus attention on globalization of R&D activities, which runs parallel with the Group Strategy's Five Themes and the Innovation Intent. The Future R&D Now Project was held throughout the autumn of 2009. There were many activities; here I will present four specific parts of the project.

The first activity took place in mid-August when a two day R&D management seminar was held; here management discussed R&D's current and future situations. After much discussion the seminar would culminate in outlining the five specific challenges that R&D is facing. The five challenges outlined in the management seminar would also represent the five specific workshops organized and attended by employees (these are elaborated on below).

The second activity is the employee presentation of the Future R&D Now project, including the five challenges. All R&D employees were organized in seven groups of seventy-five and were introduced to the project where "Dr. Toft", together with the support of People & Strategy, introduced the project. There was a band, and

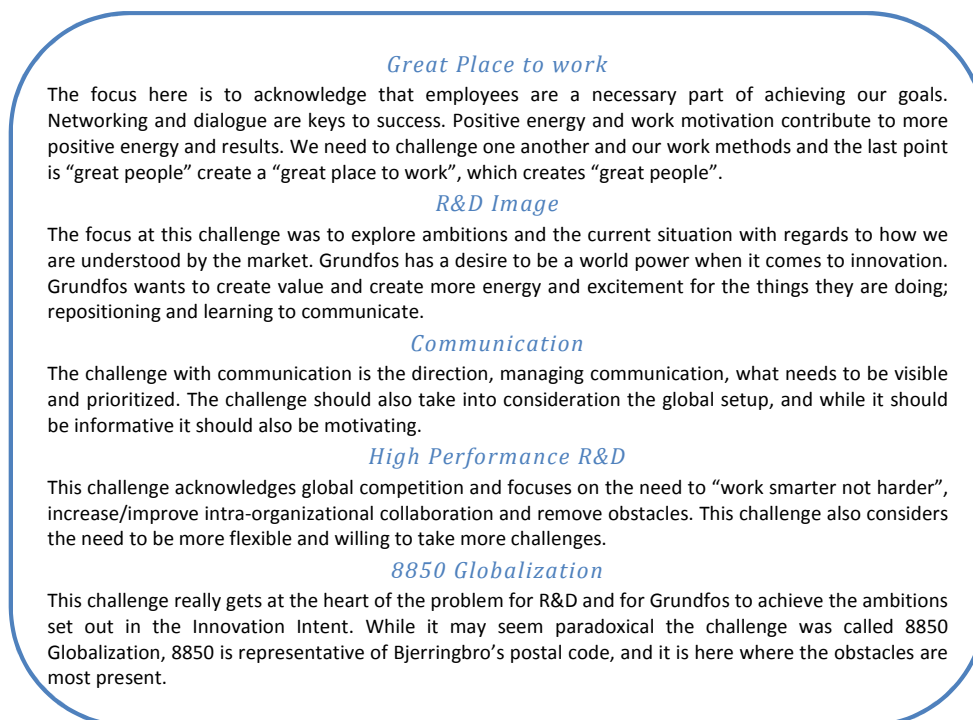


the venue was decorated with sunflower type of decorations and one large poster with five

⁷ "Dr. Toft" is the stage name of the consultant that was hired to launch Future R&D Now together with Grundfos' HR department called People & Strategy.

sunflowers where in the middle of each sunflower each of the five challenges had been written. The leaves on each side of the sunflower contain key words that correspond to the challenge written at the center of the flower. At the end of each of the seven presentations each employee would receive a form where they would select their top three workshop challenges out of the five presented. They would also need to answer the following two questions: 1) "I want to be part of solving this challenge because..." and 2) "I believe I would be able to contribute with the following at the employee workshop". The previously appointed chairman and vice chairman of each challenge would select who would participate in which workshop based on their answers.

Figure 17- Five Challenges from Future R&D Now Project



Source: *(The above is from the Second Activity in the Future R&D Now Project, Autumn 2009)*

The third activity is the Five Workshops, each representing one of the five challenges presented in figure 17. There were several reasons for the workshops in the Future R&D Now Project. Workshops aimed at:

- Engage both employee and management involvement in the five focus areas that are most important for the future of R&D's success.
- Create employee commitment
- Make it explicit that it is everyone's responsibility to be involved finding solutions to future challenges
- Create energy and creativity in the organization

Lastly, on January 28, 2010 the fourth activity was the final presentation of the results of all the workshops to all the R&D employees. All R&D employees were invited to attend the presentation at Grundfos' sports hall where there was a big stage and the hall was decorated for the event. R&D Management introduced the presentation, The R&D band (made up of R&D employees) played and all of the five workshops presented their results. The presentation concluded with a summary by R&D management and R&D Band.

3.3.4 Competence Networks

"We need to build up global networks in and for key areas in R&D development that globally can guide the R&D organization, in order to ensure that the present high level of Grundfos R&D competences and processes becomes a natural part of the global R&D organization. This will result in faster and better development adapted to both global and local requirements" (Global Network PowerPoint Presentation 2009).

On the onset there was talk about three different networks: 1) Global Technical Competence Network, 2) Global Product Network, and 3) Global Project Leader Network. At the time of this study only the first network was established.

The purpose of the Global Technical Competence Network (GTCN) is to (Global Technical Competence Network PowerPoint Presentation February 2010):

- Develop and execute a common global strategy for each technical area
- Provide access to the highest possible knowledge, experience and competence throughout the organization – regardless of physical location
- Ensure that all R&D tasks are performed using state-of-the-art tools and knowledge
- Avoid bottle neck problems due to specific resource shortage at certain locations by transferring sub-tasks to available resources

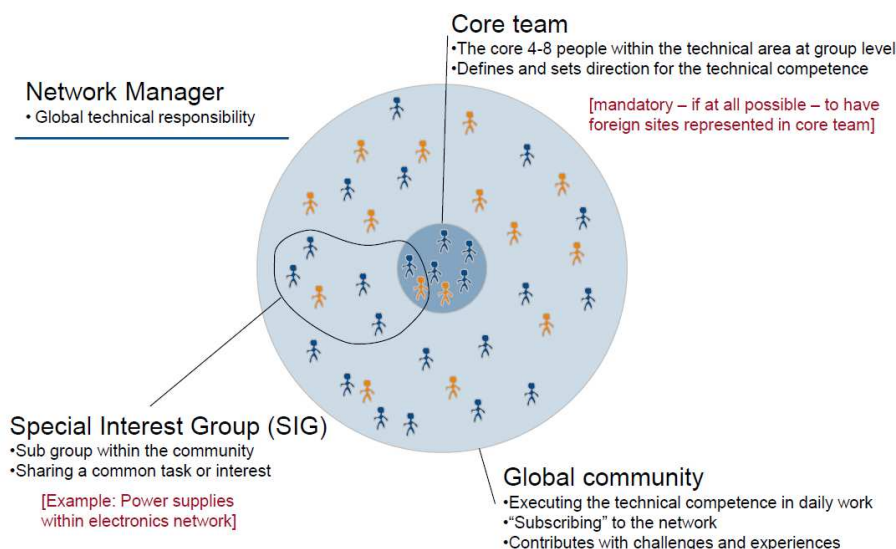
The GTCN is defined as, "a virtual forum for R&D staff executing a certain competence as part of their daily work across locations, units, functions and departments".

Members of the network share and provide:

- Knowledge, problems and experiences
- Best practices
- Design & simulation tools
- Training & education / mentoring
- Technical reviews
- Design guides
- Trends and development on new technologies (technology gate keeping)

The figure below illustrates how the GTCN would function in practice. The ambition is to bring together those that need knowledge and those that have knowledge together.

Figure 18- Global Technical Competence Network



Source: (Global Technical Competence Network PowerPoint Presentation February 2010)

According to Grundfos R&D management in order to have the most success with the GTCNs it would be necessary to establish Global competence maps. Figure 19 provides an example.

Figure 19- Global Competence Map

Example from Fluid Mechanics

Example from Fluid Mechanics

Levels

5 Instructor

4 Experienced user

3 User

2 Know how to

1 Know of

0 ?

		Needed level in Group		Needed level at site																			
Company		Initials	Title	Education																			
GPC			Research Engineer	M.Sc.	4	5	4	4	3	5	5	5	3	5	4	5	4	5	5	4	5	5	5
			Research Engineer	M.Sc.	1	1	3	2	1	2	2	2	1	1	1	4	1	1	1	1	1	1	3
			Research Engineer	M.Sc.	1	3	3	3	3	4	4	2	1	1	0	0	4	2	2	0	0	0	4
			Research Engineer	M.Sc.	1	1	3	3	3	3	3	2	1	1	1	0	0	2	2	0	0	0	4
			Research Engineer	Ph.D.	1	4	3	3	3	3	3	3	1	1	1	0	0	1	1	1	1	3	3
			Research Engineer	M.Sc.	1	0	2	2	2	2	2	2	1	1	1	0	0	2	2	1	1	1	3
		Research Engineer	M.Sc.	1	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Company		Initials	Title	Education																			
GHI			CFD Develop Engineer	M.Sc.	1	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

Is a specific competence Available at right level?

In this case: No! Action needed

Source: (Global Technical Competence Network PowerPoint Presentation February 2010)

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

Thus, global competence mapping defines and sets the direction for the technical competencies; current and needed levels for the R&D unit as well as on a Group level. Moreover, according to management it would “ensure deployment of best practices within technical competence areas throughout the organization” (Global Network PowerPoint Presentation 2009).

The GTCNs would develop competencies on several levels, more importantly it would explicitly outline the strength of the competence providing further opportunities for improving competencies, closing gaps and strengthening strategic position. According to Grundfos R&D management and as illustrated in figure 18 above, the core team (the interior circle) should include top people within the technical area at group level, while the exterior circle representative of the community should include those executing the relevant technical competence. Meetings in the GTCNs would be primarily virtual in nature through the use of internet tools, while the core team should meet at least monthly.

3.4 Grundfos R&D Unit Presentation- US⁸

“Grundfos has had a presence in the US market since 1973 and over the last three years we have made a series of major investments in North America to accelerate our growth. With the acquisition of Peerless we extend our product range as well as our US sales organization significantly. We expect a lot from this deal and see great potential for globalization especially of the Peerless fire protection systems” (Søren Ø. Sørensen, Group Executive V. President and Chairman of the Board of Grundfos North America, Grundfos Press Release, Grundfos in Record Acquisition, 2007).

In line with the expansion ambitions explained above, Grundfos R&D US was established in 2004, in Olathe, Kansas, US alongside the regional headquarters for the North American market (NAMREG). Its primary purpose was to create a regional R&D center for the North American region (NAMREG) to focus specifically on developing products to compete in the local market, however, with the new changes to structure and strategic objectives R&D US is also to be part of the Global R&D Network.

The R&D units' role in the Grundfos Group is based on the competencies in the region, availability of resources, and the strategic direction for the region. Common examples include⁹:

- Development of new products based on established technology platforms
- Adaptation of standard products to meet local needs
- Global center of excellence (Fire, Turbines, Spit-case, HWR)

The R&D US unit will operate as an independent, empowered, and growingly self-sufficient development group with a balanced link to BD, R&T, D&E teams around the world; the focus is more on D&E than R&T as highlighted by the above points. The NAMREG D&E team will actively network with other R&T and D&E centers of excellence. The team has hosted and will continue to host colleagues in seminars, networks, co-development on product and technology development projects, and exchange programs.

In the end, the D&E goal is to secure competencies and demonstrate self-sufficiency while fully developing and leveraging the investments of the global D&E organization.

3.4.1 NAMREG D&E Organization

NAMREG D&E centers utilize informal working relationships. Currently there is no formal interaction. The day to day management of the NAMREG Development and Engineering organizations will be directed by the local D&E Managers and/or the Regional D&E Manager. The Local D&E Manager reports formally to the local General Managers while the Regional D&E Manager reports formally to the Regional Managing Director and informally to the Global D&E manager. Local General Managers,

⁸ Unless otherwise stated the information in this section comes directly from the following document: NAMREG D&E “Big Picture” August 2008.

⁹ The following description is referenced directly from a presentation from R&D US where they specifically outline the big picture when it comes to their role in the organization.

Regional Managing Director and Global D&E manager weigh in on the organization ambitions of this regional D&E organization.

NAMREG D&E team activities are based on road maps derived from the strategic needs of the different regional market segments business plans. Road maps will need to be agreed upon in common between NAMREG and BD management teams.

With the impact of the Innovation Intent, new strategy planning processes, new organizational structures, addition of the acquired companies (Paco, Peerless and YCC) and the globalization of R&D establishing a valuable comprehensive regional product portfolio is necessary. The process will have to be different than in prior years. This makes it even more critical to share and raise the awareness of the regional and global business strategies and product development plans for key regional and global managers. The challenge will be establishing a new method of translating strategic business plans and deciding the right priority.

3.4.2 NAMREG D&E Network

For NAMREG D&E, the regional focus is the mantra. While this is still the main purpose, the expectation to carry Global development responsibilities has been a point of discussion and will require a further understanding of what that means to the regional D&E resources.

The regional D&E activities will need to be communicated with other D&E centers of excellence (departments) ensuring a dialogue supporting the proper utilization of D&E competencies and R&T platforms. The challenge will be to avoid loading the local D&E resources too heavily with global expectations and diluting the focus on the regional needs. Again, a balanced link will give the regional NAMREG D&E resources the right focus while providing networking opportunities, growing competencies, and offering some key resources for the other regions.

3.5 Grundfos R&D Unit Presentation- China

Established in 2005 by Danish R&D Managers, the China R&D Unit has grown exponentially over the last five years. Currently encompassing close to 85 employees (2010 figures) it is projected to become the 2nd largest R&D unit after Denmark to parallel the ambitions of making Grundfos China the second home market.

In order to present the R&D China unit most clearly I will also present a brief description of Grundfos China explaining its history and current situation. I will use significant excerpts from the data in presenting this aspect of the case as I again find individual's stories influential in painting a "more alive" picture.

3.5.1 Grundfos China

Grundfos' very first presence in China dates back to 1994 when the office in Shanghai (GSH) was established, before 1994 Grundfos had only been importing through a company in Hong Kong. In addition to the Chinese headquarters in Shanghai, there are offices in Beijing, and two additional production facilities, however Suzhou (GPC) is the most prominent production facility. As previously stated, in 2005 R&D China were established in Suzhou (GPC) at the production facility.

Along with the ambitions outlined in the Innovation intent and Group Strategy together with the explosive growth experienced and forecasted for China quick action was taken and in the autumn of 2008 the management hired Humphrey Lau to manage Grundfos China. The concept of Grundfos China- *One China* is a new concept, Humphrey Lau initiated as Chief Executive for Grundfos China; necessary to bring together all companies working in China under one common vision and direction. The following excerpt identifies the need for having one Director bringing everyone together.

*"Humphrey Lau was hired by [management] in the autumn 2008. After he came we started talking about **One Grundfos** here in China. And seen from my chair it should also be like that. There was also a lot of misalignment before. GSH Sales, was out here as well and they had their own culture and beneficial structure and then GPC and R&D." (C028)*

The clear vision brought on by the new organizational changes facilitates a more clear focus with regards to R&D in China, as exemplified by the following excerpt:

"I think for R&D China, we, especially a few very motivated by the promise of the future because before I think the R&D China, the position not so clear [globally] but now, we have Humphrey as the local head and the Sales organization had a big change so that means R&D will have more projects based on the local needs." (C019)

Humphrey Lay has also voiced his concerns and vision for the future. He states one of his objectives as follows, "Grundfos China should not be judged based on who they are, but on what they achieve and not least how". Moreover, Humphrey Lau said that in order to focus on achieving the ambitions of Grundfos in China, the next ten year's will be steered by following four guideposts:

- **Growth with innovation**
- **Focus on core competencies** (on a macro level)
- **Outsourcing of non-core competencies** (making qualified make/buy decision)

- **Growth through external partnerships**

According to Humphrey the following is the market situation for China, past, present and future.

Figure 20- Humphrey Lau's Perspective of the Development of the Chinese Market



An article titled, *Humans resources key to development*, in the China Daily Newspaper dated Monday, September 13, 2010, supports Humphrey's four guideposts and emphasis on developing employees skills to meet the demands of the market. The improvement of China's education system, and economy have paved the way for more employment opportunities, however, competition for jobs amongst college graduates is still fierce. The article provides an example where, "10,000 college students competed for 6,000 posts provided by 200 employers at a job fair in Haikou, capital of Hainan province, on July 13, 2010". While the number of university and college graduates is steadily increasing the demand and competition can pose challenges for organizations such as Grundfos.

According to Carsten Bjerg, "within the coming year (article in Grundfos Magazine autumn 2008), our R&D department in Suzhou will have some 75 employees. This department forms part of the strategic and operational tool whose purpose is to ensure that we are able to deliver the right products to end customers".

Grundfos China is becoming more organized and aligning themselves for the future. There are two specific initiatives that are essential for understanding Grundfos China: 1) cross-functional strategic planning and 2) Management Committees (CMC and CMT).

Cross-functional strategic planning

There is a lot of focus on cross-functional strategic planning processes as it is believed these exchanges help update and align functions. Each function receives an aspiration package with three inputs towards how to roll out the strategy in their function. One input is from the group strategy and this helps relate their function with the overall picture of Grundfos. The second input is specifically geared towards China and Humphrey Lau's 'game plan' for One China. And the third input is having each function work together through workshops to identify the strengths and weaknesses in order to come up with the best strategies through a more collaborative process.

"We're bringing all the input from the group strategy, from [Humphrey's] game plan and also from this business strategy put them together send to each function and then we even have a lot of functions to run some cross-functional workshop, help them to... discuss all this input with their key internal stakeholders to get the input" (C20).

Management Committees

There are two management committees in Grundfos China: China Management Committee (CMT) composed of six individuals and China Management Team (CMC) composed of around twenty

people; a management team as well as all function leaders. The following excerpt summarizes the purpose of the management committees.

“We use that... committee as a platform to discuss all these common issues, also questions and ask those people to make some commitment to set the prioritization. For example, we have been doing strategy mapping workshops for all the CMC members and we asked all the CMC members to discuss the prioritization for all these China's strategic initiatives. I think, then they can align with each other and also have some mutual consensus on what is the most important task for us” (C20).

This next section will further explore and elaborate on R&D China.

3.5.2 History of R&D China

The R&D Unit in China started inconspicuously enough when a newly employed energized graduate took a trip to China to investigate and explore what China had to offer Grundfos R&D.

It started as an outsourcing of the R&T activities [from Denmark]. There were a lack of resources in Denmark and what are we going to do? Well we take this part of this project and put it to China and follow as a technical responsible. [Together with] the project manager in Denmark and we see what happens. That was the beginning out here.” (C028)

According to the excerpt above R&D China began as an experiment, starting with simple outsourcing of back office tasks that were closely managed from Denmark. Originally the Danish manager, Søren Ishoy, hired five people¹⁰ and these Chinese employees together with respective R&T employees from Denmark made up R&D China.

In 2008 Jimm Feldborg joined R&D China and would continue to manage project management until the end of 2010 when he would return to Denmark. Jimm introduced project teams to R&D China. As one participant discussed in the excerpt below:

“When Jimm [joined the team] then the whole style with work changed. Before it is mainly one block and that means that if you're a motor engineer, you mainly do some motor things. If you are an electronic engineer then you do your own part.

And when Jimm [joined the team] then you should work in a project. You should meet, have a meeting with each other very often in which you have a standing meeting. And you need to work with project manager. Before that, we don't have this concept. We normally work individually or we don't even know what's the function of project manager at that moment. Yeah. We only know, we have heard about project manager. But what's the responsibility of project manager? We have no idea. So at that time we only know the responsible person, contact person in Denmark.” (C010)

In 2008 R&D China established the engineering team and the development process (DP) and project management began to take off. A Chinese engineer talks about the changes they have experienced from 2008 to 2010.

¹⁰ Two of the original five were still employed at the time of the study trip to China (autumn 2010).

*“Since I joined Grundfos in the middle of 2008 I thought this is a very new site and very few designers and not too much DP knowledge or project management knowledge and so on. Then after two or three years now running, I can see much, much more **improvement on project implementation** and we also can see very good progress in every job after at least 3 years with efforts under my team members.*

*And this R&D set-up, compared to Denmark, is also very young but again, for the time being, I believe in the future, we can focus on innovation or focus on the customer requirements to come up with some new ideas for different locations customers, not only from China probably but also **worldwide**, if somebody needs help from Denmark or U.S.*

*So that's maybe more focus or **customer-oriented requirements** afterwards but right now, I think we are on the way to that. And also, we build up much more networking with Danish colleagues and also other location so, that means we also **share the knowledge including R&D office but also in production**. So I think we are on the right track, [with time] we can achieve even more competence.” (C011)*

The above excerpt provides an example of the work that is being done to bring R&D China from a ‘green site’ towards a functioning and contributing aspect of the R&D Global Network.

Innovation Hub

The innovation hub is a central meeting place for Grundfos R&D China that organizes R&D ideas and activities taking into account the Group strategy and the corporate portfolio and access the Chinese market. The innovation hub is fully supported by Humphrey Lau. There are four formal meetings a year; however, at the time of the study trip to China, they were currently meeting heavily, working on aligning the projects for the next year.

3.5.3 Future Plans for R&D China

The setting is being prepared for Grundfos China to become Grundfos’ second home market. Together with ambitions set out in the Innovation Intent, R&D China is also aligning and preparing itself to meet these goals. It is important to consider that the most valuable resource: *the employees*—are not as easy to find and retain as once anticipated from Denmark; the following excerpt explains.

“Some might say that it is just easy to recruit in China and yes there are a lot of people, yes there is. But there are not many of the right people. So, it is not that easy to recruit in China. Probably a little easier than in Denmark but just to give you one example: [An engineer] is taking up this position here with me [referring to Mechanical manager] together with me and this position I have been looking to fill for over a year. So that is the same with [another engineer], that was half a year. I have had two candidates that I have offered a contract. Just two seconds before signature they are offered something else in Shanghai. And Shanghai is more interesting and probably also higher salary. So there is also the issue that Suzhou is a farmer city even though we might think it is big city.” (C026)

Talented People

While expats from Denmark do assist Chinese employees to connect and find the information and know-how they are looking for, expats are only in China for a limited time. Grundfos China has begun to take the steps necessary to prepare Chinese employees to fill middle management

positions. By focusing on one of the five themes—Talented People—of the Grundfos Group Strategy, Grundfos China will prepare key people for managerial positions. The following excerpt further explains the plans.

*“We are focused, for example, to build up some **key strategic competence in the middle management level**. We also have the talent plan [where] we try to identify the top 200, 2%, the key critical talent as a succession plan and/or as the top critical talent crew and we want to develop. We want to focus on those people and develop them. Give more investment on them.” (C001)*

3.6 Case Commentary

Overall Grundfos has a focus on global collaboration, innovation and sustainability. Moreover, Grundfos R&D wants to focus on continued market developments, finding the right people while capturing the synergies of developing a global R&D network. However, each R&D unit has varying focus areas depending on their context that somehow need to be melded together for the greater purpose and goals of the organization. For example, if we look at R&D Denmark, the focus is on getting used to the idea of global collaboration in practice and thereby preparing Bjerringbro as well as developing global processes for identifying competences for building up the global R&D network. When looking at R&D US the focus is on balancing out the focus on the local market with being part of the global R&D network. While in R&D China there is a focus on establishing a unified Grundfos China and developing routines and success for the employees to grow the R&D unit.

It is indicative from the above case presentation that Grundfos R&D has embarked on a journey of transformation from an international organization to a global one. Each R&D unit has its individual issues, which add to the overall complexity of the Grundfos R&D context; presenting a true challenge for creating a sustainable Global R&D Network, that focuses on global collaboration with competence centers, access to information and know-who across, geographical distance, time and a variety of cultural differences.

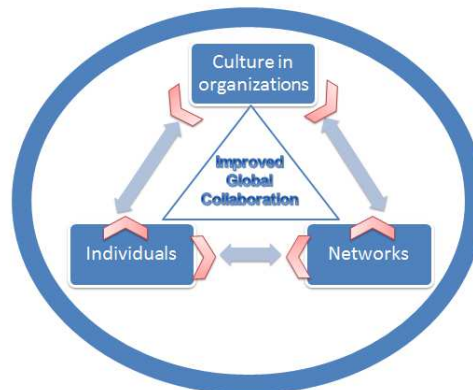
Chapter 4

4 The Conceptual Framework- *Grounding the data*

The three main components identified by the data vital to collaboration processes in complex knowledge networks are: 1) *culture*, 2) *networks* and 3) *the individual and their interactions*. The first component is culture in organizations and with that a realization of how culture continues to be misunderstood and therein misused in organizations. The second component is that of networks, the structural configurations that are outcomes of using complex matrix organizational structures. The third is the individual and their interactions and how they influence the organization and the organizational networks.

The following conceptual framework, as illustrated in the figure below, focuses on a triad created by connecting: 1) culture in organizations, 2) the networks within the organization and 3) the individuals and their interactions. These three main components are theorized to be linked by interaction; through communicational access points where information and knowledge can be shared and relationships have opportunity to develop.

Figure 21- 3 Point Model for Understanding Network-Based Organizations



Source: Jensen 2010

The following sections will further explain the conceptual framework in more detail; firstly, explaining the three main aspects representative of collaboration processes—culture in organizations, networks and individuals and their interactions. Thereafter, I will briefly explain the sub-component of knowledge.

4.1 Culture in Organizations

When I focus on the culture in organizations, I explore all possible manifestations of it. Culture is distinctive and embodies all that the organization has been, is and aspires to become; it is alive, dynamic and changing. Identifying basic, yet important factors that are integral to the organization is an essential aspect of defining/delineating the organization's culture.

Culture in evolving times...

Traditionally, national culture is how we have organized/labeled individuals, groups by place of origin due to generalizable and common traits, mannerisms, beliefs, language, etc. The outcome of this is typically stereotypes since traditionally speaking the literature has used categories to identify and label individuals and groups. While these theories were a handy way for organizations to manage their internationalization activities they have begun to backfire. Simply put these typologies have become antiquated due to globalization because globalization has created two simultaneously running scenarios 1) a seemingly “closer” world and 2) the evolution of the incredibly unique individual. Globalization together with the aid of continued technological advancements over time has evolved MNCs to a place of hyper-connectivity; MNC’s are more connected than ever before with virtual meeting rooms and even ‘live’ working spaces. Emails, virtual teams and other tools that are used to bring us closer are a great asset; nonetheless it does not replace face to face communications, dialogue or other forms of relationship building. Culture in organizations affects how we understand one another. Meaning coding and decoding and dealing with communication can become a barrier for business.

Therefore, it is important to consider the effect of culture on the organization. The impact of globality, of internationalization and of technology has created what Terpstra and Kenneth (1992:91) call “transformations”; just as well organizations need to respond and change to the “macro culture shifts” that permeate the global business environments today. The availability to gain access through various mediums to people and events around the world creates a feeling of extreme proximity, however, on the other hand this has created the illusion that cultures are disappearing/ merging. Nevertheless, there is no disappearing act it is simply an illusion. What we are experiencing is two things in one. While nations and older generations grasp firmly to their traditions and specific cultural artefacts, newer generations look to expand their personal culture by adapting artefacts from cultures they experience or are exposed to through the ease of connectivity we experience today (through the Internet and other technologies such as smart phones that allow individuals to always be connected). This change in access is what I call the *evolution of an incredibly unique individual*. It affects how we see people. Do we see them for their national culture through symbols or cues expressed by their external appearance (or the simple fact that we know where they come from and make attributions about who they are) or do we wait to listen for other cues that indicate other ways of understanding them?

Focusing only on national culture is no longer enough to accurately examine the inner workings of MNCs. Rather the overuse of national culture preparedness in international organizations has been seen to impede the aims of business by creating super-sensitivities that take focus away from the tasks that need to get done. However, focusing on the organization’s own culture or possibly the combination of the organizational culture with a special focus on the specific sub-culture being researched in this study, i.e., Grundfos R&D culture, could prove to advance the collaboration necessary to achieve global R&D networks.

While national culture remains an influencer, it should not take the lead influence because it tends to be taken to an extreme and seen as an end all be all problem/solution within international organizations. This begs the question, which part of national culture does affect the work culture?

Any aspect that impedes the understanding of meaning and effective communication will ultimately affect the working culture. For example, language, working styles, leadership styles as well as learning styles. While all the examples are important I want to draw closer attention to learning styles as they come from the individual while most of the others are generated through interaction. Learning styles seen as a sub-influencer affects the working culture in how individuals communicate and understand one another. This will affect the triad of organizational culture, individuals and networks presented in the 3 point model for network-based organizations.

Schein (2004) divided organizational culture into three factors: artifacts, espoused values and basic assumptions and values; defining organizational culture as, “the basic tacit assumptions about how the world is and ought to be that a group of people share and that determines their perceptions, thoughts, feelings and their overt behavior”. If you for a moment put aside paradigm differences and concentrate solely on the above reflection, it concretely connects culture to the underlying explanations of the individual concerning their needs, emotional intelligence (social capacity to realm many different contexts), understanding and reasoning of the world. The point I want to emphasize here is that Schein makes a reasonably important connection regarding how critical our values and basic assumptions lead to and determine our perceptions, thoughts, feelings and ultimately our behavior. Interestingly enough, this is actually the very same thing that is understood under the paradigm of Interpretivism—how individuals are affected by their values and preconceived notions influences how they react to the world.

When considering the global network dynamics many focus too much on culture as an identifier of where someone comes from and thereafter use culture as a human gauge, mentally measuring and categorizing people’s overall behavior. I would rather focus on building relationships through task focus, especially since this type of business naturally calls for relationship-building in network structures. Many times in organizations management has brought in theorists or consultants that use/teach cultural dimensions but sadly this only gives employees a one-sided and static approach of dealing with their global colleagues. Another issue is a combination of xenophobia and superiority complex and this tends to be an unconscious behavior or defense mechanism. This situation is usually brought on by unintended naïve or ignorant comments sometimes used to break the ice and or merely said with the intention of sounding culturally sensitive but tend to be based on generalizations. As I will explore in Chapter 9 under the Culture Literature Review meaning creation is influenced by our culture, fortunately it is not permanent impressions; with reeducation, greater awareness and tools these too can be changed, expanded and/or revised.

4.2 Networks

Networks foster the freedom needed to create. By nature there is more autonomy in network configurations than in more traditional hierarchical structures. Networks can be explored through three primary approaches: structurally, relationally and culturally. Traditionally networks have been examined by exploring the structural set ups. However, the data shows that networks can be further defined not just as structures but as *structures formed by the continuous interaction of individuals*. Novak (2008:4) states that

“Network research has traditionally focused on the structure of the networks and has paid less attention to the relationships within the networks (Cross & Cummings, 2004). Krackhardt

(1994) suggested that relationships in networks are complex and “that they emerge in the organization; they are not preplanned” (p. 218). Moreover, humans network because they are social beings (Spears & Lawrence, 2002), and it does not appear that structure alone sufficiently explains an actor’s performance in knowledge-intensive work (Cross & Cummings; Davenport, 2005)”.

Weick’s (1979, 1995, 2009) theory about sense-making in organizations introduces the process he calls *enactment* where individuals are understanding and thus reacting onto their environment. According to Weick (1995) networks, as part of organizational structures, are created by the individuals in the networks and do not exist independent of the organization. Networks demand high degree of personal commitment; employees are invested at varying degrees for different reasons. Therefore, I see networks as frameworks that hold the interlocking web of human interaction necessary to exchange a number of things such as information, competencies, and expertise, which all are forms of knowledge being transferred. But it is not just the quantifiable aspects of interactions and exchanges that are valuable. It is worth noting that it is the relationships and how individuals interact that weighs greatly on the development of network structures (see also Kilduff and Tsai 2009). Kilduff and Tsai (2009) start out their book on social networks and organizations by telling us how important the relationships that form the networks are and how these connections are instrumental in the success or failure of projects. These relationships house the information, and overall knowledge that further develops the organization. Considering that one of the most important issues MNC’s focus on is how to identify, organize and spread the knowledge throughout the organization; it becomes quite relevant to explore the relational aspects of networks.

MNC’s have become flatter, implementing matrix and other more flexible organization structures, which aim at reducing redundancy, create synergies in communication and sharing of know-how. However, the larger the organization becomes the greater the potential to have overlaps of power, information, and a mismatch of aims and purpose that can create friction throughout the organization. In order to reach the aims of successful international R&D activities in MNCs we need to refocus and optimize how we collaborate together. We need to identify the reasons why we are in business together; we can no longer have an ‘out of sight, out of mind’ perspective. What we experience, what we need and what we feel guides us independently as individuals and together as an organization to perceive the world we live in for better or worse. When working in networks it is important to understand the underlying factors that create perceptions, meanings and ultimate understandings that will determine behaviors and provide rationalizing logic. This requires new & unconventional management thinking and new tools for knowledge workers to help them navigate the terrain.

Network *thinking* is a state of mind. It is related to how we view ourselves in the context of the organizational structure and this is dependent on many factors, on how we learned to learn as children, on how we were socialized, on the many cues and inferences and assumptions that we make every day—on how we interact. Network thinking is about changing our perspective from the individual as a stand-alone entity in the organization to the individual in interaction, as part of an involving, dynamic, and collaborative process.

Network *relationships* develop out of collaboration, a need for one another and a need/desire to trust. Grundfos aspires to be a global innovative organization. However, this is a perfect example of why I have set focus on the individual and their interactions. It is the individual's job to realize that they are dependent on one another. In very practical terms knowledge workers need one another, they need to be adaptable to a highly complex environment, and they need to remove skepticism and be more inclusive if they are to succeed at collaborating across a Global R&D Network. In many respects, their work is based on working together in teams, projects, across different functions and departments. It is their dependence on each other that promotes an environment where new concepts and knowledge are able to manifest themselves. Individuals working in this type of organization need to have a greater adaptability to handle the unknown. When they first get past the fear of the unknown they will be better able to develop relationships with global colleagues. Moreover, when they remove skepticism from their relationships within their global R&D networks, they begin to call upon one another and are open to the opportunity to trust, then collaboration begins to really take off and the true opportunity to create and transform knowledge is unleashed. The next section will present the third component—individuals and their interactions.

4.3 Individuals and their Interactions

“The act of innovation is both cognitive and emotional. Coming up with a creative insight is a cognitive act—but realizing its value, nurturing it, and following through calls on emotional competencies, such as self-confidence, initiative, persistence, and the ability to persuade” (Goleman 1998:100). Goleman realized the importance of cognitive structures, but we cannot exalt one concept at the sake of another. While individuals hold crucial weight in the processes of research and development it is when individuals collaborate that ideas have greater capability for success; it is the added value of cumulative knowledge that accelerates development from concept to production. In order to solve problems and collaborate, individuals need to communicate with one another, know how to influence each other, and fundamentally persuade each other. Interactions are defined by this continuous cyclical give and take, and over time individuals that have continued positive experiences become comfortable with one another, changing the intimacy- level of the relationships. Back in 1998 the vice chancellor of Cambridge University (also a former Research Director at IBM) stated that, “the very paradigm of invention, even in science, is changing its focus from the individual to collaboration...the ideas of individuals must fit into a matrix of innovation that spreads across a group of researchers around the world...you have to talk to everybody” (Goleman 1998:101). Twelve years later, I fervently believe this statement still holds truth; it is this collaboration-the need for it—that needs to be communicated across global R&D networks. I want to make it clear that my focusing on exploring the individual is not meant to retract from the above mindset but add to it; it is in understanding the individual and their interactions that we can get close to refocusing on collaboration and less on the immortalization of the “I” in Individual and Interest that is represented by the often quoted saying, “what’s in it for me?”; an attitude prevalent in knowledge work.

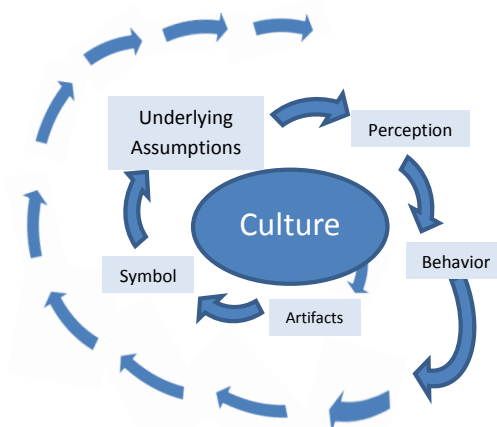
Exploring the topic from an academic perspective even looking back ca. 35 years scholars were aware of the disparity between the current literature on business management and the growing complexity found in organizational life. In 1985 Peter J. Frost and his colleagues collaborated on a book called *Organizational Culture* which set the tone for exploring non-economic considerations for

managerial issues within organizations. One of the initial considerations was the individuals' need to want more than just monetary compensation from their job but rather seek also to 'experience a sense of community' while at work. Not only is community and belongingness an important consideration but also the importance of 'quality of life' or what is more commonly known today as work-life balance (Frost et al, 1985, p.15).

Individuals and their interactions are drivers of their societies. They are driven by their motives, whether emotional, need-based or derived from patterns of logic that have formed through the years, i.e., their experiences. The importance of individuals and the relationships they have, how they manage them and the inter-dependency are especially vital for growing R&D-driven MNC's to understand. Because the work that knowledge workers provide the company is an internal thought process/mechanism not tangible and rather elusive that is why there is a gap missing in the research of organizations. Many scholars focus on what individuals produce but few focus on the actual individuals themselves. The interactions/ relationships are affected by the individual on a micro level. Especially within network-based organizations the importance of these interactions and the behavioral consequences of how individuals respond to their environment are keys to uncovering how to stimulate the best responses by providing individuals tools to better navigate network relationships, meeting people's needs and developing their emotional intelligence, for example.

The process of meaning creation stems from the concept of culture. Individuals observe and interact with artifacts and symbols in their particular contextual environment. This leads to generations of underlying assumptions (as described by Bruner as well as Schein). This assumption generation combines with other external drivers such as an individual's needs, motivations and emotions to create perceptions about the given context. This in turn manifests in behaviors that include but are not exclusive to how we communicate and the language we use.

Figure 22- Meaning Creating Process from a Cultural Perspective



Source: Own Creation Jan, 2013

4.4 Knowledge

Knowledge is defined as the result of understanding information. As Davenport and Prusak (1998) state, “knowledge is a mix of framed experience, important values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information.” Additionally, Bhagat, Kedia, Harveston and Triandis (2002:206) add that, “knowledge originates from unique experiences and organizational learning by key constituents, and it often remains embedded, not only in written documents but also in the routines, tasks, processes, practices, norms, and values of the organization.” There are many theories focusing on managing knowledge in organizations.

When discussing networks the information exchanged between individuals becomes invaluable for 1) the success of the company 2) continued success of the interactions and 3) the long term evolvement of current relationships and establishment of new ones. Therefore it is vital to examine knowledge as well as taking a look at what the consequences for creating value will be.

Nonaka (2000) emphasizes the need for focusing on the process of transitioning knowledge from tacit to explicit that will ultimately lead to the follow through of aspired visions (in Bartlett and Ghoshal 2001:687). Håkansson and Johanson (2001) talk about knowledge, how it is usually categorized as explicit and tacit. I find their explanation of tacit knowledge fresh and inviting. They state, “...tacit knowledge (or know-how) is not easily expressible since it is personal, deeply rooted in action and in the individual’s commitment to a specific context, i.e., it is embodied within individuals and their interactions. Tacit knowledge is also hard to formalize, and therefore difficult to communicate to others (Nonaka, 1991). They have chosen not to categorize knowledge into separate boxes but rather hold on to the idea of Dahlqvist (1998) who also argues that knowledge should be seen as a process that is intertwined with the other activities of the actors (Håkansson and Johanson (2001: 209). Holden (2002:43) best articulates this concept when we writes, “networking is in fact a cross-cultural knowledge-sharing activity and is, as such, also a form of cross-cultural negotiation, in which protagonists strive to agree on (a) who is going to share with whom which mutually held resources and (b) the degree of access to those resources and degree of compensation or form of consideration for the privilege of obtaining that access”. When examining R&D, knowledge plays a key role in developing new products, and creating innovation is through assessing intellectual assets. How these actors and structures create value individually as well as collectively is important to assess in order to capture possible best practices that can be applied (adapted) to other R&D facilities. “The explanation they give of why firms create and transfer technology more economically is that “through repeated interactions, individuals and groups in a firm develop a common understanding by which to transfer knowledge from ideas into production and markets” (Kogut and Zader, 1993: 631)” Johansson and Håkansson (2001: 209). Nooteboom (2002:3) also states that the extrinsic economic value of trust reduces transaction costs because, “it enables interaction between people and between organizations”.

I have observed that there is a connection between how individuals learn and what cultural artefacts and cultural history has influenced their socialization and development. The following three learning styles are indicative of the effects of culture and communication and of course with that said that includes communicating across languages. The three learning styles are: 1) visual (learning by seeing), 2) auditory (learning by hearing) and 3) kinesthetic (learning by doing). While our origins

highly impact what learning style we prefer, it is my belief that our environment, experiences and cognitive structures also affect how we prefer to learn. I believe that connecting how individuals prefer to learn will allow us to better understand and better communicate, improving collaboration.

4.5 Summary

This chapter introduced the conceptual framework. The conceptual framework outlines and explains the three main components: *1) culture, 2) networks and 3) individuals and their interactions*, were found to be the most prominent in the context of international R&D activities at Grundfos R&D. The conceptual framework theorizes that these components and their inter-relationships are fundamental in improving collaboration processes.

PART II- JOURNEY OF DISCOVERY

Chapter 4 presented the context of the study by describing the present situation of the Case Company, Grundfos, including Grundfos R&D and the three specific R&D units explored in this study.

Part II- goes a step further to provide a thorough story of the context, also introducing the content of each of the R&D unit's current situation—the emergent themes.

Part II- is to be understood as a narrative, interpreted by me, giving a voice to all of the individual participants that were part of this study and my preliminary analysis of the R&D unit in the context of Grundfos and its ambitions for a global knowledge network.

Each of the three chapters that make up Part II, represent each of the R&D units explored in this study—Denmark, US and China.

Part II is focused on exploration towards making sense of the emergent data. A focus on the specific unit and the emergent concepts will facilitate addressing the overall concerns of how to improve collaboration processes across a more integrated global knowledge network. Unless otherwise stated Part II captures the voice of the participants; this is my account of their situation.

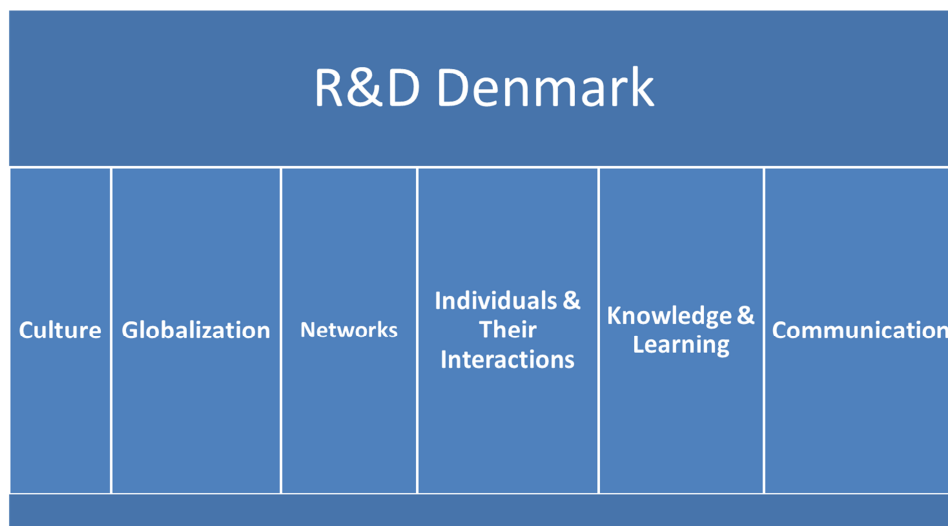
Each chapter will present the identified themes specific to that R&D unit, provide a summary of unit situation through excerpts from the data. Lastly, each chapter will link the discussions to the research questions and to the conceptual framework.

Chapter 5

5 Grundfos R&D Denmark- Identified Themes

Chapter 4 presented the case of Grundfos, putting specific focus on the high ambitions set out by the Innovation Intent, highlighting the significant importance of Grundfos R&D and the need for it to work effectively on a global scale. This chapter sets focus on my time in Grundfos Headquarters, particularly in R&D, where I interviewed forty Engineers and managers from both R&T and D&E as well as several Global managers and HR responsible. The figure below illustrates the six primary themes identified through this preliminary analysis of the emergent data found in R&D Denmark.

Figure 23- Six Primary Identified Themes for R&D Denmark

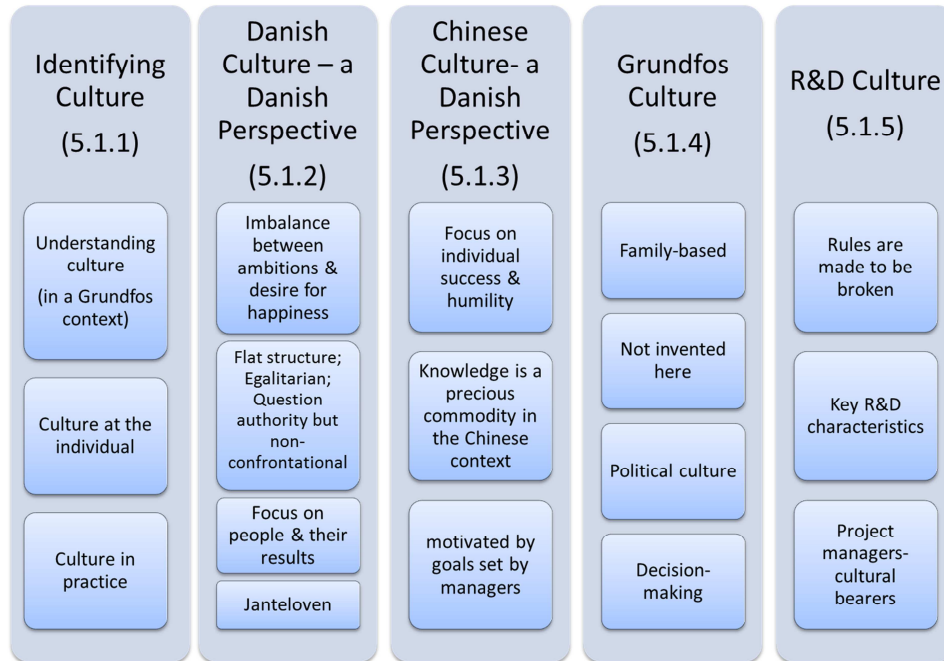


There is an added complexity for presenting and understanding R&D Denmark in that it is not independent but rather part of Grundfos Headquarters. Data collected is thus complex and vast is the coverage. This chapter is condensed and organized to focus solely on the main issues presented in this study: improving collaborative processes for international R&D activities. The six identified themes above will each present main sub-themes under which underlying topics, issues and points will be further examined.

5.1 Culture

In the case of R&D Denmark culture has taken center stage. Here the employees interviewed explore culture from several angles; culture as a concept, culture as in national culture, and culture as organizational culture. I have therefore organized the data under the following three main sub-themes: 1) identifying culture, 2) cultural perspectives and 3) organizational culture. The figure below presents underlying topics within the three sub-themes.

Figure 24- R&D DK: Culture theme- presentation of sub-themes & their underlying topics



5.1.1 Identifying Culture

This first sub-theme covers three main topics: 1) understanding culture, 2) culture at the individual level and 3) culture in practice (should there a question, the context of the dialogue for each of these excerpts was culture).

5.1.1.1 Understanding Culture in a Grundfos Context

The wrong tools for 'measuring' culture

I have identified a distinction between culture in practice versus the dominant culture theories that have been taught and used in organizations much like Grundfos. The excerpt provides concrete example, that culture in today's dynamic environment is not about identifying who is more collectivistic and who is more individualistic. Gathering that type of information based on categorical national culture groupings is misleading and according to the excerpt below from a Danish engineer is non-consequential for building network relationships.

"It is ways of thinking and cooperating. It is habits. I like to think of it not as differences; there is too much focus on differences... with my interactions with Chinese there is as much difference between individual Chinese as there is between Chinese and Danes. The thinking is what determines how we behave." (DK014)

Culture is relational, building trust

When we begin to explore culture at the micro level, i.e., at the individual level, we should consider culture in practice or in action. Exploring the interaction, communication, the context, I believe will facilitate building network relationships. The following excerpt from a Danish employee emphasizes

that understanding culture lies in the building of relationships and the development of trust in one another.

“We don’t manage culture. I think that a lot of has to do with building trust with each other.” (DK010)

Cultural differences can be found everywhere

Cultural differences need not be limited to national culture traits. When considering cultural differences one Danish employee contemplated, ***“just say people from the engineering school vs. from the financial school; they are a different culture; so we have to sit down [and figure out] how we will make the communication [work].” (DK016)***

As the first excerpt above stated, “there is too much focus on the differences...” And based on the above discussion and the last excerpt, the emphasis turns towards communication and developing relationships.

Dynamism of cross-cultural relationship building

Below a Danish employee contemplates that it is not about becoming like another or losing yourself but rather adapting to create a free space if you will, a space where you are open to the differences. ***“...I’m not saying now I’m going to Germany so I have to change... but I know if a go to Germany it’s a good idea to have a black suit... because then the door is more open.” (DK016)*** It is not just about the black suit. It is about establishing relationships; it is about understanding how to achieve mutual benefits from investing in developing relationships, through creating mutual orientation.

5.1.1.2 Culture at the Individual Level

The link between culture and perceptions begins to unfold here. From the data, cultural understanding is more about the understanding of that given situation and the individuals; in other words, the process of perceiving and generating precepts, and taking action. Given the context we are already aware that colleagues abroad are from different cultures.

The following excerpt from a Danish employee exemplifies how perception, how individuals make meaning out of what they see, here and experience, is used unconsciously to make sense of how they would communicate with their foreign colleagues.

“In general, I think [culture]; it’s people who are different from me.” For example, ***“...people who come from a [different] place in the world or background or know things that I don’t know [then] they are different from me. So I have to sit down [and figure out] how could we make the right communication.” (DK016)***

Traditionally, organizations have provided cultural training for employees to better comprehend other cultural settings and how to react in these, however, there is a long way between identification, recognition and understanding. Additionally, as this interview points out when they are at work, their main priority is their job and therefore they need to know how to react. This does not necessary come from knowing how to greet people in China or the Middle East. While interesting and helpful it does not provide the applicable tools of understanding and navigating the context when confronted with the situation.

Instead you wait to understand the nuances in that relationship because it might be two different Chinese or Danish or Americans people and then may act totally different. It is more of a contextual and individual nature.

Interpreting others through your own values

“The thing with understanding culture is found in understanding ‘the why’ of why people do or react as they do. And if you don’t understand that, it can easily be something that you interpret it based on your own culture instead of truly understanding it.” (DK019)

This is why I believe perceptions are an important aspect of identifying culture for the micro level in organizational life. Perceptions provide a free space for assessing if value judgments being made are correct or if they need to be readjusted.

Need for adaptability

This Danish engineer is talking about adaptability. The first point they make is regarding the need to acknowledge that the way one does things at home may not be the same way things are done in other places around the world. The remainder of the excerpt focuses on the need to adapt.

“One big issue with Culture, as a Dane without getting much of training that you think that this is the usual way of doing things all around the world. And it is for sure not. The first thing is to understand as the Dane that you are very special in that not many other people actually think like you do. So you need to understand that you need to change the way you act. You might not like it or think I will go home and do that. But you need to change the way you act (at work) because you need to act in a way that other people expect from you.” (DK017)

Breaking down stereotypes

“When you are meeting someone from another culture it can be the case that, for example, with an Indian with a Turban on his head, something happens inside of one that makes you speculate over him, and you think, “he is not that smart, he doesn’t know as much as us from the rich western world”, but through collaboration and understanding for the other you find out, “Wow, he IS intelligent!, and it was exactly this revelation and acknowledgement that we experienced that they were very intelligent and competent; and they could contribute with as much as we could.” (DK001)

The above excerpt is an honest reflection of the process of perceiving others, usually an internal process that most of would not admit to experiencing. For some reason or another different assumptions build up our understandings. It is these assumptions we need to break down and replace with new more applicable ones. As the Danish engineer states ...“through collaboration and understanding for the other...” one begins to change our mental scripts.

Nothing to be afraid of

The following excerpt from a Danish engineer asks for individuals to have more common sense thinking when it comes to culture. They ask for individuals not to be afraid of culture and consider that if our foreign colleagues know us as people they will see our good intentions despite of whatever cultural boundaries we may cross.

“I think that we have to be careful, I think that we have to be aware of culture, and reflect on it once in a while perhaps, but we cannot let ourselves become afraid of it. My

*understanding is that if you know someone as a person, know them well, this can sometimes compensate for once in a while doing something that is not correct in their culture. **If they know that behind what I do I have good intentions, but they have to know me to be able to decipher my intentions [my sincerity].***" (DK002)

5.1.1.3 Culture in Practice

The following long excerpt is from a Danish engineer. They discuss the dichotomy between the ideal situations for improving multinational relationships versus what actually happens according to the accountants from this employee. I have divided the excerpt into four separate sections that place emphasis in different aspects of the culture in practice.

This first section expresses the situation in Denmark, where it happens to be a very flat structure.

"I would say that I think we have a little problem there with many of our people because the way we are working in Denmark, it is not very hierarchical, it is more of-we are more of the same level and everybody can say what he wants, and you can go directly to another person and another organization without informing his department manager and so on.

The following section pinpoints that many people either do not understand or cannot accept it is different in other countries. This is quite the opposite from what the data has presented up until now.

And many of the people, with what I can hear is that they DONT REALLY understand or that they REALLY accept that IT is different in other countries.

This section below may be difficult to understand without being a Grundfos person, but the point is that in Grundfos in Denmark, individuals initiate things themselves; they have a high degree of autonomy. The comparison below points to the tendency for more hierarchy and formality in China compared to Denmark.

They don't do exactly the same in China for example, you cannot say to the person - "you have to do that blah blah blah like we do here in Denmark because of that and that and that". You need to have a more close contact and relationship or you need to have it approved by one higher in the hierarchy. But there I think we really have troubles to have people understanding that.

This final section is what is most worrisome between the ideal and the actual situation. For example, the Danish engineer points to some information learnt through cultural training such as..."Chinese never say no...", however, the problem that this person is alluding to is that in the situation 1) employees have not truly been given tools for dealing with culture in the context and 2) people will revert to whatever comfort zones feel safest.

Because when you ask people, they will say "I understand that and that. I understand that the Chinese never say no." But when I hear people who has been in China and coming back and hear what they are telling about what they have done, I don't think they really do it as if understanding the Chinese culture or the Asian culture. (DK004)

5.1.2 Danish Culture— a Danish Perspectives

The workforce in Denmark is primarily composed of Danes. The following section explores the opinions and understandings of the Danish culture from a Danish perspective.

5.1.2.1 Imbalance between Ambitions & Desire for Happiness

*“It is a happy culture, where people take care of one another; also with the welfare system. But also that people should be able to take up challenges and people want to be the best, with a lot of innovation. Still, at the same time people want to be happy. **It doesn’t really balance out every well because people want to be number one but they want to be happy too. There is a disharmony there.**” (DK018)*

The above excerpt references the dichotomy you find in Denmark where family is placed very high on the priority scales. Job is important too but for Danes a job a part of your personal self-fulfillment. It is not something that you do primarily to make money. You of course are happy to make money but the job that you have is also a big part of your identity.

The Danish employee cited above can see the dilemma that yes, we want to be happy and have a nice family life, and have time for them, have hobbies and relax and enjoy life but we also want to be number 1, be the best and this takes time and more dedication.

It is acknowledging we only have so many hours in the day and Danes for the most part only work (at the office) 37 hour work weeks. There is a priority to pick up children from Daycare starting at around 1500 or 1530 in the afternoon.

America has had a reputation of being number 1, being a world super power. I believe it rests on the culture of working to the bone, working long hours, working overtime, because in the US the job you have, and the amount of money you make are your identity. The more money you have the more you can afford to buy the nicer things and this also contributes to your status in society.

5.1.2.2 Flat Structure, Egalitarian, Question Authority but non-confrontational

Key Cultural Characteristics

*“Danish people don’t like to take conflicts. It’s a **very flat culture, where you are open to questioning authority and debating** [but in a] non-confrontational [way]; not very provocative debates. Well, maybe debates but not like hot- on- hot.” (DK012)*

No Traditional Hierarchy found here...

The following two excerpts represent discussions from two different Danish employees. As introduced above Danish culture is founded on egalitarian notions, in other words, that by providing equally for all that the wealthy would give back to help the poor and thus the society as a whole would be better off. None the less the second excerpt reveals that Danes tend to like to challenge the status quo.

*“Danish culture at work, good to make considerations but with very little authority, **you must think for yourself.** For example compared to China, Danes are independent, self-driven decision makers and employee.” (DK013)*

*“Danish culture is independent and at the same time very social, low hierarchical, informal; they like to challenge boundaries in other words, **they have a lack of respect for hierarchy.**” (DK014)*

There should be a note here as it will be explored later in Chapter 7 R&D China, this phenomenon, and this aversion to hierarchy affects decision-making negatively as no one will take the risk. Another aspect of this phenomenon is the realization that while there are no formal classic hierarchical structures, there is the phenomenon of lobbying and the need to gain influence of all potential and necessary stakeholders.

Freedom at work & high level of self-regulated responsibility

The following two excerpts both from Danish employees embrace the overall sentiments regarding Danish work culture: autonomy and the ability to be self-driven.

*“The characteristics of Danish culture at work is the way Danes work, the **vast amount of freedom we have to do things.** You are informed what you have to do but the “how” that is very much up to yourself. There is a lot of personal responsibility (*selv ansvarlige langs stykke hen af vejen*). I also think this is why Danes are very good at being able to start things up themselves and are also good to set goals and finish things. And we have a good idea when something is finished. And it is this process of completeness and the degree of completeness, this goes together with the conceptualization a person has about quality. This thinking is very common. It is some way or another it’s a given, in other words we look at things and we know that that’s how it’s supposed to look when it’s done.” (DK011)*

Employees need to be self-driven

“You should not wait for someone to come and ask “how’s it going?”, You have to personally take the initiative and say, “Well, ok. I know how my boss is, so you can perhaps start there and ask him and then it is about asking and not holding back.” (DK006)

5.1.2.3 Focus on People & their Results

One would wonder why such a disdain for hierarchy? The following excerpt from a Danish employee reveals that focus is not on the position but on the people and what they can do. Therefore positions alone cannot offer you power.

“We do not focus so much on where people are in the hierarchy but focus rather on what people can do; their abilities and what they stand for. More focus on what type of person that is sitting in the position.

This is very different from other cultures where the position in the hierarchical structure is an extremely important deciding factor for how you see that person. How much respect you have for that person.” (DK010)

A focus on people and their competencies is a great way to identify certain aspects of performance. But the problem here is that we should be careful of not following into the trap of making value judgments based on our pre-conceived notions. A seemingly simple conversation or discussion can seem to be more than it is. It is good to follow up and ask. It depends on your needs.

The second thing here is not just the invisible hierarchy but also how people are judged by their abilities and their personality. In the above excerpt they state ...”more focus on what type of person they are!” This is very important to conceptualize.... and it affects perceptions, the persons place in the network, their role in the network as well as their role in sub cultures, and access in in and out groups.

5.1.2.4 Janteloven

Janteloven is a Danish cultural story representing informal, unspoken social laws meant to control people in order so that no one person thinks they are better than anyone else. According to Janteloven, independent and opportunistic behavior has been looked down upon. This cultural phenomenon results as group protection. There are two primary disadvantages: 1) keeps people down and 2) according to one of the excerpts below, it is part of your personality as a Dane and it will influence you.

Janteloven

*“There’s of course a cultural thing about Denmark and especially Jutland with the Janteloven, if you know that term....Which is one of the unspoken cultural common knowledge reference frame/things that you have in... more in Jutland than in the rest of Denmark. The thing with not thinking that you’re better than anyone else, I think many people in Jutland and in Grundfos would say we’re not really hit by that but for sure you are. I mean you see if it, if there’s a person coming in, who is really trying to go ahead and put a lot of effort into his own career and such a person would be **frozen out totally (socially)**. It’s just not part of the way you’re doing it in Denmark....And that’s a huge difference from, for example working in the US, where it’s much more supported, at least my feeling from working in the US, is that people would more see such a person as a leader and a person that is maybe a good idea to stick on to and try to follow and say well, we may actually get somewhere if we do this. You may actually boost your own career by going in the stream [of that person]. That’s certainly not how it is in Denmark... I think we’re getting better at it in Denmark but I’m pretty sure, I can say it with confidence that we are not there yet.” (DK012)*

Frozen out professionally

In the above excerpt the Danish employee discusses how individuals that try to put a lot of effort into their own career without thinking of anyone else will be socially frozen out. I asked how could a person be professionally frozen out. The following is the Danish employee’s reply:

*“I would say first of all, I haven’t seen very strong examples of it yet...So I’m also speaking out of just knowing the culture and thereby knowing or foreseeing what would happen if, say, what would happen if a strong leader type from the US came and try to be a part of the organization over here. So I may be wrong...But on the other hand I’ve seen small examples of people, who had, maybe not the same burden of Janteloven onto his back and. Well YES, it could be something like... not **sharing knowledge to the same extent**. (DK012)*

Protection from Opportunistic Behavior

*“Yeah! and it’s a form of trying to **protect yourself like...** “well if this person is just going straight for his own career, then ...how can I be sure that my own ideas would not be misused just to boost his career and not to for the best of my own career” and that’s that’s probably a cultural reaction that you see everywhere. For sure you also see it in the US. **If you have a very competitive environment then people will start to be more protective about***

their own ideas.” (DK012)

There is a link between the egalitarian nature of Danish culture and knowledge and information sharing and building trust. An environment predisposed to compete will have more opportunistic behavior, for example, China and the Chinese job market that has seen extensive developments in the last couple of years. Chinese engineers have become commodities to be traded from foreign company to foreign company. Chinese job candidates need to identify how they can remain marketable. Whereas the Danish economy is quite mature and there is not the same competitive job market, there is less opportunistic behaviors. This revelation is substantiated by the excerpt below.

“AndThat’s may even be a thing that creates more open environment in Denmark -the fact that we have the Janteloven. I don’t know...that’s actually a question for you, I guess. .. The fact that, if people are trying to just steal ideas from around and go their own way, boost their own career, then they are hit with a sledge hammer in the head culturally speaking. So you don’t see a lot of them and therefore people maybe are more open to sharing ideas because they know that we have a culture where we don’t support that people will go their own ways...” (DK012)

Disadvantage-Janteloven keeps people from fulfilling their potential

“Especially in this region it is an undertone in the culture. And it can affect how we as individuals acknowledge what we actually are able to accomplish.” (DK010)

Disadvantage-Janteloven part of personality

*“In the times we live in an international context so we are constantly challenged. We are more and more conscious of these culture constraints **but it is still alive deep within people's personality.**”* (DK010)

5.1.3 Chinese culture- Danish perspective

5.1.3.1 Focus on Individual Success & Humility

According to the following to Danish employees, Chinese employees are focused on their individual success but are also quite humble as they are not talkative or boastful as Westerners are.

*“Chinese- introvert; probably much like a lot of Danes, [but] very much focused on **individual success.*** (DK014)

*“In China they are more **humble.**”* (DK006)

Not talkative or boastful, need to be the best

The following excerpt introduces several important aspects of how Chinese culture is seen from a Danish perspective. For example, they are not used to talking about themselves and their accomplishments and this stems from their time in school.

*“Interviewing Chinese employees in China and how they got really nervous when having to talk about their **accomplishments** and what they are good at. [Selling themselves]*

There was even a time that one candidate began to cry because he did not feel that his English skills were adequate enough. I felt they were ok, we could understand one another. But they were so nervous. Another time they could not remember anything about what they can do or have studied. SO now we ask them to bring documentation with them.

I don't think that it is natural for a Chinese to tell about what their accomplishments are, it is just as when they are in school and take exams, they write their answers and hand it in, they do not have to speak.

This has been the biggest surprise when dealing with other cultures. But it also should be said that when some of the Chinese employees feel comfortable and then it comes, and they can speak and share. It is a big barrier to overcome.” (DK010)

5.1.3.2 **Knowledge is a Precious Commodity in the Chinese Context**

What I have heard so far is that Chinese employees have a fear of sharing their knowledge with their Chinese colleagues, but have no fear of sharing their knowledge with Danish colleagues. The following excerpt from a Danish employee reflects the reason why Chinese employees tend to behave as such.

“Maybe because this knowledge is catalyst for getting acceptance among the Danes...it's a precious thing.” (DK015)

Competition in China is a metaphorical wall for the kind of knowledge intense network that Grundfos wants to create. However, Chinese colleagues realize what Grundfos wants to achieve and share with their Danish colleagues. This above excerpt suggests they do this to gain acceptance. This would mean that this is one way they exercise their behavior for further developing their network.

5.1.3.3 **Motivated by goals set by managers**

“If you as a manager do not set the expectations for your employees [then] he cannot fulfill them. When you have a bonus scheme in China they deliver what is on the bonus note.” (DK008)

The data from R&D China identifies a Chinese project manager confides that employees are not motivated to be proactive, they feel a sense of obligation and that these two things should not be confused. This is a good example of how perception can change how we understand our context. The Danish employee above perceives Chinese employees as poor self-motivators but if you examine the Chinese project manager explains that motivation is not enough, that until they understand the meaning behind tasks and activities that they will have to be motivated by managers, which truly means that they feel obligated to do their work.

5.1.4 Grundfos Culture

Since culture has been an important topic for management I wanted to specifically explore what employees thought about Grundfos, and its culture. The following experts are from Danish engineers explaining some of the key cultural artifacts representative of Grundfos.

*“Another thing [that describes Grundfos] is that **people are proud to be here**. We have employee satisfaction surveys and when you examine there is a question, “Will you recommend Grundfos as a workplace to your friends and acquaintances?” and this question receives top scores. Always! Top Scores! When you disagree about salary, when you don't trust your boss, if you ask someone if they would recommend working here, and the answer is a top score, it says a lot.” (DK011)*

*“The Grundfos Culture is molded by quite a great amount of **openness**.” (DK011)*

*“Grundfos culture, strongly coupled with Jutland’s culture.... The difference between Copenhagen and Jutland is really obvious. Danes from Copenhagen tend to be more outgoing; extroverted while in this part of the country a lot of things are **unspoken**, for example, there is **less bragging, even in Grundfos**.” (DK014)*

*“[The Grundfos culture is] still rooted in family-owned business, independence, values, but work wise it is much younger... if you know what I mean... the culture is more focused on the **love for technology rather than the specific company**.” (DK014)*

Overall, these four characteristics tend to be a good representation of the Grundfos culture: Grundfos employees are proud to work there; still individual employees are not boastful. The environment is open and there is a love for technology that stems all the way back to the founder, Poul Due Jensen.

5.1.4.1 Family-Based

One of the fundamental aspects of the Grundfos Culture is that it is steeped in the founder’s history and it is such an integral part of the city where it is located—Bjerringbro. This section covers excerpts that discuss the symbiosis between Grundfos and Bjerringbro, the family-feel and how generations of family members dedicate their lives to the company. Moreover, there are discussions emphasizing the importance of technology and innovation and this stems from the founder as well. And while some, a small minority cannot see how the Danish culture effects Grundfos, many acknowledge different aspects, most particularly the focus on prioritizing family and personal life before work, though having lived over ten years here, I believe that this too is changing.

Grundfos is Bjerringbro

“I was a small child when my father first started working for Grundfos, I have lived here in the city, and there is about 5000 Grundfos employees that live here, and maybe 6000 or 7000 people live in Bjerringbro. So there are many people that are employed by Grundfos. Those that don’t work for Grundfos probably work for a sub-supplier or otherwise the doctors, or school teachers or nurses, along those lines, that are employed by the city and these people also only talk about Grundfos. So when you walk around in Bjerringbro and there is a crisis in Grundfos everyone talks about it.” (DK011)

Grundfos is a Family-based company

*“When I started working here I knew many people, I remembered them from down in the town, I had either gone to school with them or their children. It is funny that in Grundfos it is just like... one big family... (it reminds me) I was in business school and when I was studying a business case that read, “Grundfos was like a Japanese company”. And I thought, “They got this all wrong, it’s a Danish company”, but it was the whole culture that was Japanese. It is characteristic of Japanese culture that one’s whole life is spent working in one company, and that the whole family works in the same place and this comparison was actually correct! **I think the biggest family one can find in Grundfos, is one of 23 families in one way or another**”. (DK011)*

Family-owned with an emphasis for technology

*“The thing that you can still feel when you come from the outside is that this company is based on a family-founded business. And there are **some proud traditions** and also this thing that one should be **grateful for what we can do**. It is characterized by like many big organizations in Denmark that have been established just after the war... “I don’t connect*

Grundfos with nothing especially Danish but rather that it is more connected with this family business. And what I find pleasing with Grundfos is that one has an opportunity to be challenged competency wise.” (DK019)

Effects of Danish Culture on Grundfos

The more I conducted interviews, the more curious I became about how Danes themselves saw effects of their own culture on the organization. I had the opportunity in this interview to pose the question:

Does the Danish culture affect the Grundfos culture, and to what degree?

“How should I say this in a nice way? I think it is more of a Bjerringbro culture. And perhaps it’s a bit that people have it good at Grundfos, you are here from 8 to 16; you can take flex time. People are not used to that in other places in the world where one needs to work 60 hours a week or whatever applies. This affects Grundfos, really affects the Grundfos values in a way, I think. I don’t know if that is Danish culture, I don’t know. I believe it is more a Grundfos culture that has been built up over the years.” (DK018)

The Danish employee particularly identified the distinction that the local town culture could be a greater influence—however, a negative one. The participant compares the work life in Denmark to other places in the world pointing to how it may seem that Danes by comparison are not working enough. This is a complex discussion with several layers. We could state from the above excerpt that Danish employees do not work enough hours and yes, if compared to other Grundfos organizations they probably do not. However, the pace and energy level is very high at Grundfos. Perhaps, it is important to consider these comments in perspective of the Danish culture discussed previously. Danes prioritize their family and private life and therefore, there is more and more of an imbalance between career and work ambitions and the individual’s personal goals for life enjoyment. The Danish culture does affect how much output and time is given at work, since Danes prioritize family life.

5.1.4.2 “Not invented here” Cultural Artifact

Another aspect of the Grundfos culture is this “not invented here” phenomenon. This ideology’s origins are two-fold, 1) founder mentality after the war focused on being self-sufficient and 2) culturally, Jutland is known for being more of a working society. The following excerpt expands on this phenomenon.

*“There’s a tendency in the culture, I don’t know if it’s specific for Mid-Jutland or it’s specific for Grundfos. I think it’s specific for Jutland as such. There’s a tendency, that you think it’s best if you do things yourself....and don’t rely too much on other people....that could be, from a personal point of view, sort of this self-made man principle, that well, **“I can do this myself”** ...but also from a company point of view, the culture of **“not invented here”**- that’s whenever you see a thing, you’re may be open for discussions, you can say, “ well that’s really interesting, we should think about collaborating on this and that project **with people from the outside of the company**” but when it comes to decision making, you will have a tendency to say: “we can probably do this better ourselves”. It’s not really something that we have invented here and there’s probably a lot of things in it that we cannot rely on because we don’t know exactly how they did it and so on and so forth. (DK012)*

From self-sufficiency to collaboration

The following excerpt further explains the reason why it has been so important to be self-sufficient and the need to collaborate to move towards achieving our future ambitions.

“Self-sufficiency; If you look at our history, our founder thinking was that we should make everything ourselves. If others were going to make money on it, we might as well do it ourselves. That is why we have our own travel agency, our own bakery, unusual things, at least we have had it in the past. I think this has been a true philosophy in its own time because if you look at Grundfos today, what is it that we can do? We have many competencies in many different facets, incredibly high competencies that are here in Grundfos. SO we can always find an expert no matter if we say chemistry or material science, or processes.... However, in the times we are living in now, we don’t have the time to start from scratch every time we start something new. We need to go out and purchase it instead of making it ourselves. Find someone that is the best at making it and collaborate with them. This has been a challenge a few years back when we still tried to make it ourselves. We no longer do that. We have people that work on identifying those that are best at different elements that we foresee we will need and establish partnerships with them. This is a significant change in the Grundfos history and culture. It is not certain that we are that good at it yet. You also have to learn to be good in order to be able to establish some good relationships. It is a huge challenge for us, to learn.” (DK010)

“Not invented here” is a barrier towards global collaboration

The following two excerpt from two Danish employees also explain that this “not invented here” phenomenon is a barrier towards future success.

*“This is a long term, we cannot change that, we can buy a new screen, so tool-wise we can adjust a lot of things **but what is the global mindset or the lack of the global mindset** based on for example **“not invented here”** issue, this is going to take us a longer time to **change the culture** and this of course will have to be, dealt with, maybe also to overcome the **barriers** that it will bring us. It is where we see that we have to work more long-term and have to **change the behavior**, maybe the Grundfos culture.” (DK024)*

*“I think it is a **very big challenge**. It’s especially if...I don’t know how the “not invented here thing” is going to be rolled out but say maybe in sometime from now, all China department is going to start exporting technologies. Right now, it’s more like we push technologies and then you have a centralized picture of Denmark and yes they’re doing some things but it’s very much controlled from people here in Denmark. [However], what would happen if they started to do projects on their own and push technologies towards us in Denmark? I think there would be a **huge** barrier accepting that And I think the “not invented here thing” would show up **immediately**. How can you avoid that? Well, I think, one way is probably to have people from Denmark sitting down there and participating in the project so that you have a feeling of, well, “this is still our product. It is still us, who have invented it but it’s just with the help of somebody else”. That would be one way. It would not be the **true** globalized way, where you start accepting that they can also do some things which is good. I’m not talking about my own opinion now. I’m just talking about what I think would happen...I think there would be a big barrier.” (DK012)*

5.1.4.3 Political Culture & Decision-making

The last major aspect emergent from the data regarding the Grundfos culture is an underlying political culture and decision-making.

Political culture

Perhaps this is one of the main disadvantages found in having a network-based, egalitarian organization; you end up with a political culture. The following excerpt illustrates how this very Danish phenomenon affects the business of Grundfos.

"We have got really big issues in getting top decisions, because also [certain top managers] when you are asking them, they will advise you. They will not tell you to do this or this, they will advise you, "I think this would be a good idea, but of course, it is up to you", So it is wide spread in our organization.

*It's very Danish. But also you end up being in a **kind of political culture**, where you have to have a good network and you have to ensure that all the different people within this area agree with you when you want to get something accepted in the organization. And of course, it is strong in the way that you have got a wide support for things that we do, but in a crisis situation in might be pretty difficult to agree across the organization and sometimes people are frustrated and people want a concrete answer on an issue and in some terms you might get a question instead of an answer." DK021)*

Lobbyism is part of grundfos culture

As described above the environment predicates that employees have to 'lobby' for stakeholders, for influence and support. The following excerpt presents how the political environment creates a lot of competition and red tape within the organization itself.

*"Well, sometimes you can compare it to a political environment. So, you know who are those that meaning creators, and if you have some ideas that you want to push through then it's about getting ahold of the right people and discussing these ideas with them. But it is very much about **gaining consensus** and this causes this **whole decision-making process to take a long time** to get things through; very much comparable to a political system.*

*That is the picture I have. If you can picture the parliament, where there exists several key discussants in some areas and they listen to what people are saying, and you know that if you can influence and get these guys on your side then you finally can get a majority and that is the way you get decisions through. So in any case, if you know **THIS**, then it is **very much a network**, right." (DK006)*

It is interesting to consider the aims for a global R&D Network, and that most of these informal influence meetings and discussion are personal and f2f. Moreover, that you do this kind of business with people you trust. Then the question then becomes, how can you trust people that are not close to you culturally, physically and in some cases (perceived) technically distant to you?

5.1.4.4 Decision-making

As presented in Chapter 4, Grundfos is a network-based organization and this implies that there are overlapping decision-makers in a matrix structure. However, based on the data there are issues with how decisions (big ones) are taken or not. The following two excerpts reveal how the organizations culture affects how decisions are made.

Decision-making is difficult to see

In an organization that is highly egalitarian and consensus seeking such as Grundfos it may seem unnatural to make decisions alone. The following excerpt points out how the middle management decisions makers are difficult to see.

*“It is **difficult to see who makes the decisions** in Grundfos; of course, there is top management and top decisions, and those you can always see. But many of the decisions down the hierarchical structure; you don’t really know who has made the decision. This is a typical Grundfos thing.” (DK011)*

“Don’t hide behind your boss”

The last point builds on my previous sentiments regarding the need for more explicit and formalized middle management lines. The following Danish manager explains that employees should make decisions and take on the responsibility.

*“Because the idea is that if I am your boss and I tell you what to do I am kind of responsible if it works or not. The Danish mentality would be (maybe it comes from peasants and Vikings and seafarers and so on) you decide, and take the responsibility and consequences. **Don’t hide behind the boss.** That might be a Danish heritage that people are used to being members of a small team with no clear boss; more like a group, an implicit boss. Maybe it will evolve. People normally have a lot responsibility themselves and that responsibility is distributed and **there is no power distance.** ” (DK015)*

I completely disagree with the above sentiments regarding managing and making decisions. I will further emphasize how it should not be an Engineers job to make managerial decisions. His or her focus is on building technology, creating sustainable solutions, building relationships across the global R&D network in order to achieve his/her technological goals. Isn’t that the point of being managers and being paid more money that you are able to have a greater perspective and understanding of the context and make decisions based on the overall strategies of the company but also your own agenda in your area in the company? If managers are not going to take responsibility then What will happen? Who will make decisions? I think this is a lot of responsibility to place on individual employees.

The above Danish manager makes a reference to power distance as in what Hofstede defines as the distance between managers and employees. And I would agree that there is no traditional power distance from managers and employees, however, there are unspoken and invisible lines of demarcation and these have to do with influence and status (contingent upon your reputation and competencies).

If you consider how people need to identify and access the decision-makers and thereafter they have to also attempt to convince them of their ideas. So it is not so much power distance but a combination between access and acceptance in network relationships.

Lastly, I would like to point out that there is an issue if managers would agree with the thoughts expressed here, that hiding behind your boss in other words expecting your boss to make decisions is a bad expectation then there will be a problem with globalization.

5.1.5 R&D Culture

When exploring culture we should consider the various layers in the organization. It is important to consider if there are any significant data regarding cultural characteristics specific to R&D. The following excerpts explore four aspects interesting to consider: 1) rules are made to be broken to achieve results 2) manager roles are best as coach, 3) employees need to be self-lead and 4) project managers are key for passing on to the employees what are the proper/expected behaviors in the organization.

Rules are made to be broken

*“There is a **difference** between the R&D culture and the Grundfos culture. **We are within development and we have to be curious and not always play by the rules.** We have to break the rules sometimes in order to get new results and this is certainly not the case when you are talking production. So I think there ought to be that some issues, at least [some issues] should be in a different way than the rest of Grundfos.”* (DK021)

Freedom and creativity, but how to make the distinction in a way that it is not abused by the freedoms and forces that ‘control’ the Network.

Two key R&D characteristics

Interviewees and observations both found that the part of the success of R&D Managers and employee relationships reside in the common understanding that managers need to *“be more a coach than a traditional manager”* while employees need to be, *“self-lead”* and *“able to take on initiative”*. (DK021)

Project Managers- Cultural Bearers

*“You could say the project manager is the cultural bearer in the organization because all the project managers are in a project with more nationalities or have been in it quite recently. So we do a lot of collaboration across the borders and we work with different cultures. Actually one of the things we have seen, a project manager in his project in China where he has tried to collaborate in Hungary, Finland and Denmark at the same time; it’s a very good example of the global collaboration. As a **project manager you need to be the one that opens the doors and make people speak and work together.**”* (DK007)

5.2 Globalization

“We should continue to extend our present competence centers around the world wherever justifiable while at the same time striving for an organization where we are all working together worldwide in a human global web of relations and shared working culture.”
(Group strategy)

The above reference comes from Grundfos Group Strategy. From an R&D perspective, globalization is quite new to Grundfos. The following theme is particular in that it also covers contextual phenomena happening in Grundfos R&D and therefore, the underlying themes are unique when compared to all other themes. This theme is organized into three underlying sub-themes presented below:

Figure 25- R&D DK: Globalization theme- presentation of sub-themes & their underlying topics



5.2.1 Current Situation

This section presents the current situation at the time of the study (2009 Denmark). These three excerpts from three different Danish managers have been selected to help illustrate the main issues that are afflicting the situation. The transition from being self-sufficient towards collaborating is difficult one in practice.

From outsourcing to building global R&D network

*“So that means that, when, the R&D centers were satellites, they were asked to make, to develop products, which were easy to make and which WE, here in Denmark, were confident, that they could make. So that was a job done for Denmark and in the future, it should not be that way. Then they **should develop products on the same level as we are doing here in Denmark** and it is not something which is decided by the R&D in Denmark but it is **decided by the global product spread.**” (DK005)*

Global vision requires changing old habits

“Right now, the projects are actually controlled from Denmark, by people from Denmark. But in the long run if you want to have this network- based organization, it’s not going to be that way and you would have projects running independently in different places.” (DK012)

Denmark is still the center

*“I don’t know if it’s so much about **control**. I think it is about **tradition**. This is a 60 year old or more company and every decision has been taken right here for many many years and suddenly in a period of two or three years suddenly this needs to be let go of. And it’s not that many years ago that our group president Niels Due Jensen he said he could not believe there would be R&D outside of Denmark. And now some few years after, suddenly it explodes. So I don’t think it is something personal you want to take control of **I think it is the habits of the organizations**. But I don’t feel that it is equalized yet. A lot of things are happening in Denmark and some part of the organization is better to involve (the sister R&D units) early*

and others wait until everything is decided and proceed. So it is very different in this organization how the approach is. But for sure, Denmark is still in the center. (DK006)

5.2.2 Perspective on Globalization in Grundfos

The following four excerpts emphasize the different perspectives that globalization has in Grundfos R&D. The first draws attention to the Group Strategy, while the second reminds us that while Grundfos might very well need to expand that we should keep in mind that globalization is a result of need. The last two excerpts focus more on sharing the frustrations that some employees and managers have experienced.

Group Strategy

*“It started with group strategy. If you take group strategy it is very very clear that one of our key challenges is getting the **synergies out of the globalization** which means that we need to find new ways of working together.”* (DK024)

Being Global is a Consequence of Primary Targets- Growth & Knowledge Sharing

“Global is a consequence of a primary target.” (DK006) R&D Denmark needs to be global to grow, China needs to be global because it needs to “access the domain knowledge in Grundfos Denmark” (DK006). *“There is no need to be global if you don’t get any benefits out of it. So to be global means that you have some other targets that demand you need to be global. And these targets are that we want to grow and if we need to grow that means we need to be global. So being global is not a target in itself. It is a consequence of another target.”* (DK006)

Fear cannot hold us back

We need to get down and dirty. We need to make mistakes, we need to try. Fear can no longer be a hindrance for action. (DK012)

An issue of money?

*“I can tell you that, that we have had some heavy discussions around that and **the discussions are often stopped by a budget-discussion** and when we are ending there, then, I think we are completely failing, because then the next thing you would say is that, **we can’t afford to be global.**”* (DK005)

5.2.3 Key Obstacles for Success

The following section delves into the key obstacles confronting Grundfos R&D. I have organized the section into four key obstacles: 1) Perceptions: centralized vs. decentralized, 2) Perception of Headquarters, 3) Perception of R&D units: satellites vs. centers and 4) Communication in a Global Network Perspective. All excerpts presented in this section are based on an interview with a top manager deep in the trenches of globalization.

5.2.3.1 Perceptions: centralized vs. decentralized

Role Clarification- From centralized to decentralized

“The starting point was that everything was developed here in Bjerringbro and we were in connection with the organizations outside in the world. But more on the level, that we were telling them what to do; [that was] decided here in Bjerringbro. And now we are working in

the opposite way. Bjerringbro is just a location. We are trying to push that [idea] through. Bjerringbro is just a location." (DK005)

"I fully understand that R&Ds outside... The R&D in China, have a feeling that we are still centered and focused in Denmark..... Maybe we have not been that successful in showing that we have changed that yet. Because it is not just a matter of my own sake but it is also a matter of [for example], processes within the group, processes within- how we are developing products, how we are allocating project managers and how we are interacting and so on." (DK005)

Semantics about location & significant power

*"Maybe because their (other R&D units) mindset is not that global yet **due to the fact that they have an idea that the connection between decision power and location is an important point.**"* (DK005)

When roles and perceptions are so skewed this is not just word play it impacts how people understand their environment and how they behave which in turn affects networks through the interactions. There is a connection between decision power and location. R&D units see Grundfos Denmark as the center for decision power and they feel distant from this source of power.

5.2.3.2 Perception of Headquarters

Perception of a HQs existing even though HQs says there is none...

*"One thing, I think that we should have in mind is that we could also say that the organizations we have around the world, they are **sitting in a waiting-position...** That means, that they are not taking some initiatives... And that is maybe something that WE are waiting for here in our organization. **They are also part of the global organization, why ARE they not taking some initiatives? Why are they not pushing? Why are they not developing a new way of communicating? Or proposing a new way of communicating...**"* (DK005)

As an outsider to the context of this study, I believe I understand why this manager seems frustrated. However, I also understand why his expectations are not being fulfilled. R&D units, specifically those that I have investigated, e.g., US and China, see Grundfos Denmark as the Headquarters. And this initiative-taking persona the manager is seeking is outside of organizational structures and roles; it tends to be more of a Danish characteristic. Americans are too conservative (play by the rule mentality) and Chinese too humble.

At this point in the interview I interject and suggest that it is about perspective (the following sub-heading is what I said to the manager). The managers' answer follows.

"But it is a perspective they have. They continue to have a perspective that maybe they see Denmark as the headquarters..."

"Exactly! But my point is that, maybe we should focus and put some people in positions out there, where their primary focus is actually to put themselves on the "world map", we would say- The Grundfos world map and put themselves in a position, where they are able to drive some of the changes that we want to implement. But you are right, then it is not the people we have out there yet today. Because they are seeing themselves as sitting either in a SALES company or in a satellite looking back on the big headquarter. They are not seeing themselves, as being a part of the headquarters. You could say..., if you look in the

organizational structure, or the diagram, on the white paper, you could say that the R&D center in China IS a part of the headquarters. **But they do not see themselves as a part of the headquarters. They still see themselves as a satellite, and to some extent also a part of the sales company out there. So I think that you really..., you have a lead there, about this - at this is maybe more of a headquarter-satellite issue than it is really a cultural issue, when it comes to the end of the day.**" (DK005)

5.2.3.3 Perception of R&D units: satellites vs. centers

The last excerpt brings us to the next section that further explores the perception of satellite vs. centers.

Satellites vs. centers in a global R&D Network

"I think the complaints are still that the R&D centers out in the world are acting more like satellites than they are acting equal R&D centers to Bjerringbro. And that means that Hungary is seen, in some peoples head, as a satellite to Bjerringbro. R&D China is still seen as a sort-of a satellite to Bjerringbro. And I think that is the complaints that we hear.

On the other hand, I also hear that the way we are working here in "our house" (Business Services) or in Bjerringbro is not the way we can work, if we are working with new team members in China. And that is obvious for everybody that there is a difference between working with different cultures and so on. But what is not obvious for everybody is, how to... Let's say we have a task of making specifications of new products. If we are doing that here in Bjerringbro, then it is a collaboration between a lot of people sitting together and they are starting a project, they are working forward, and then suddenly the specifications have been developed. When I discuss with the R&D centers out in the world, especially China, then I think, it won't work this way, because here we have some people who are brand new to the company and there is a lot of them so, what they need is a clear specification written down- made very quickly so they can just read what they have to do. And that is a completely different way of working compared to the way we are working here in Denmark. That is definitely a new discipline that we have to learn- that there are different ways of working and interacting with the centers around the world." (DK005)

5.2.3.4 Communication in a Global Network Perspective

The fourth key obstacle is communication. The last three obstacles are quite revealing and if we allow ourselves to reflect on them they are all related to how individuals in different parts of the organization perceive the whole and the parts of the situation. Communication can be linked to perceiving as perception is indicative of how individuals will communicate and thus behave.

Gaining access to the right information

*"Communication is definitely one big issue if not the most important in the phase we are right now because for example, how our knowledge is spread in the group through official communication. But it is definitely also spread through discussions at the coffee machine and by people just meeting each other in the lunch room and so on. And of course, that won't work in a global organization. So I think **communication and access to the right information that is the key here.***

But the worst thing that can happen is that, if we have a R&D set up in the US or in China or wherever, which are not getting access to the right information and they have a feeling of sitting in a backroom without information they need to take the right decisions. Then they would always say that not be able to be successful within the R&D." (DK005)

Global communication is a challenge

*“In a global set-up communication is different compared to the way we have been communicating in the past. **And that is really a learning point not just for me but for the whole organization, especially the organization here in Denmark:** What is relevant to communicate and what is not relevant to communicate? Can you make information overflow? I am not sure, that we really have been working on that yet and found the right key to solve that problem, to solve that challenge, **because it IS a challenge.**” (DK005)*

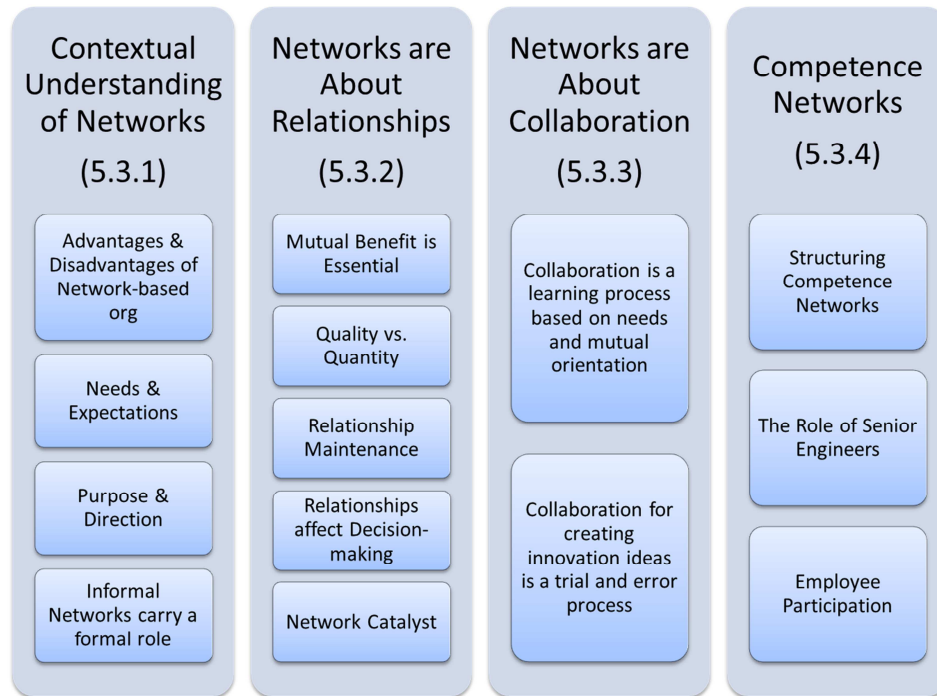
Communication- a difficult task

*“I am trying to communicate everything I find relevant. But even though I am **forcing myself** to do that, then I can see that some information is missed by the members of my organization, which are not sitting here in Bjerringbro, because the people sitting here in Bjerringbro are also getting information from other sources than just me **so it is a difficult, extremely difficult task to get the right information to the right people at the right time.**” (DK005)*

5.3 Networks

The third theme is organized into four main sub-themes that explore different aspects of networks and the context of the situation in R&D Denmark.

Figure 26- R&D DK: Networks theme- presentation of sub-themes & their underlying topics



5.3.1 Understanding Networks

The first sub-theme is gaining an understanding for networks in the context of R&D Denmark as well as the greater context of Grundfos. Here through the data I identify the setting of the organization as network-based and the advantages and disadvantages for this type of organization style. Moreover, this sub-theme discusses needs and expectations, purpose and direction and concludes with a realization of the significance of informal networks.

5.3.1.1 Advantages & Disadvantages of a Network-based organization

The following excerpt from a Danish manager puts things into perspective—the advantage and disadvantage of network-driven organizations is the same—time. It takes time to build up what this manager calls a “historic network”.

“I do feel that I am a part of a network-based organization. Yes, very much so.”

“Advantages of being in a network-based organization are when you have been part of the organization for many many years you know exactly who to talk with and how and when it should happen. A disadvantage is that our decision-making processes can sometimes be

somewhat heavy.

Another disadvantage is that it can be difficult for new employees, as it takes a long time to establish your network.

*“We tend to say that we are very much a networks-based organization. **When you have been her over 15 years as I have, I have a historic network**, its partly because of the various jobs I have had along the way, so this gives you a network. And it means that when you get to know one, all of a sudden you know perhaps five others that could be interesting to get to know.” (DK006)*

5.3.1.2 Needs & Expectations in a Network-based organization

The following seven excerpts focus on the needs and expectations of managers working in an expanding multi-national knowledge network setting. From needing network participants to become more autonomous and be able to challenge one another despite status or title, mentoring new employees into the organization so that they are included. There needs to be a clear purpose of what the network can and cannot do and there is a perspective that management needs to spread out from Denmark and become more flexible. The last three excerpts focus on the need to access information and know who and where the right people are; there needs to be open-mindedness in working together.

Autonomy, Challenge one another; Personal affect professional relationships

*“Autonomous people in the network, initiate things by themselves, equality (despite titles) it’s the competencies that count rather than the titles (in some org. if you don’t have the right title your thoughts don’t count and that is not the case here) where **people challenge each other and try to make things even better**. It goes both ways, for management and as well as for employees. There will not be much change necessary in order to achieve this. Don’t challenge each other enough. Very mature organization, many people know each other. **Personal relationships may affect the professional relationships**. It may be we don’t challenge each other.” (DK013)*

Mentoring new employees into the network

*“**Shared and accepted process, common tools, and a lot of person to person interaction**. Not a management driven network. **Relationship between individual employees...** for example, in China we allocated mentors (a colleague in Denmark)... started with a 3 months training in Denmark. This helped to integrate them with tools and processes and a network of people. The mentor program was not limited by a specific period of time. It has lived on. Unfortunately, it was only possible for the first 10-15 or so. **It was not feasible to it that way in the long-run.**” (DK014)*

A clear direction

*“I think that you have to be very aware that **the network has to have a pre-defined goal**. So there has to be a mission. And you also have to be aware of what it is not. It is just as important. So you also have to ensure there are some processes in the network and that has to be some systems for how the network should work, for example, communication forms.” (DK010)*

Management needs to be spread out & flexible

"The leadership would develop and would be coordinated at more places. So we do not overlap on plans in different places. It also provided flexibility." (DK010)

Accessing information

*"An organization that has some systems in place where people have the opportunity for networking and finding the right people and it should be pretty simple to keep oriented in what colleagues are doing around the world. Common sense, IT systems." Currently, we have Insites (name for the Grundfos intranet) but search engine is not functioning as it should and if you need to network when the organization is as big as it is and plans to continue to grow, the problem is not getting information, if I were to read all the updates then I would not have time for anything else. **The point is to be able to search effectively.**" (DK019)*

Systems & Face-to-Face Meetings

"We need:

1) Systems

*2) Need to meet once in a while because of culture and if you need to **trust** people and if you have only talked on the phone or chatted online it does not give them same as those that one has known over ten years, you can joke with. Those are the people you have most trust with. So that is why you need to meet F2f with colleagues from all over world." (DK019)*

Open-mindedness & Access to the right people

*"For me, it's when we do some things... when we look in the new address book and say, "Okay, I know him and him and I'll just call him." Or I'd say, "Okay, I have a job something for you, will you help me?" That's when a good network organization [works]. The other thing is that **people are open in the network**: open to try some things; open to do things differently." (DK016)*

5.3.1.3 Purpose & Direction

In the above section one of the excerpts touched upon needing a clear direction and purpose. This section further explores this perspective. The first excerpt below reminds us that we need to be aware that the purpose of creating networks is business. The second excerpt focuses on the need for direction.

Purpose is Business

"The whole idea of the global R&D still be one company but the R&D is split geographically but we have a lot of challenges to have it as one company and secure we don't duplicate competencies. Don't start two projects that have the same scope. Or there's a risk that something needs to be done but is not done because of miscommunication. It is of course much more challenging dealing with people with different cultures, and background and education and family background."

*"Of course we have seen this already with the Chinese and American and also with Finish and Hungarian. **We should not underestimate the problem here at home; because the house (BD) is very big and there are a lot people that have to be informed about a lot of things.** But no doubt that the ambition is that the Grundfos R&D should be one well-functioning R&D and the background is that there are different purposes*

-
- *I think that most important purpose is that we **really understand** the different kind of **customers from** the different places **around the world.***
 - *Also get the **access to the most clever people**. We have the big ambition to grow a lot; we know all the competencies we need here in Denmark.*
 - *I actually think that most important thing that we can gain most from globalization of our R&D to understand the **customers' needs and really work experimentally innovate new offerings and fulfill their needs** and to do that we need to be in the market also with our R&D.*
 - *and then of course we have to **avoid to duplicate a lot of competencies** so we have **specialists** in one thing than we have to avoid having what is not needed*

So that is the overall purpose and then of course we have to have the organization function very well.” (DK020)

Management & Direction

*“I was discussing this with a top manager and I asked them regarding Globalization: what is the goal for the future? And **they were also in agreement with me that it was not completely clear what should happen**. For example, it would have an impact in the department where I work what aspects should be moved to or further developed in China. But we have not come any longer in the process.”*

*“We need to concentrate on how I will develop the department and what competencies I was to get from the global units. **I am missing the plan/direction of the global units so that you can plan which competencies you will want to develop further.**”*

*“Primarily I am focusing on China, but it is tied up in that I am **really missing the direction**. What is it we want to achieve? What are the primary competences we want to build in Hungary, Finland and China? The long-term goal, what is it I should invest in, how should I build my department out from. Are there any skills which I have no use for such as for example, in China and Hungary? There just a lack of common direction of how the global units are going to develop over time, so I know how to build up my department.” (DK018)*

5.3.1.4 Primary Functioning networks are informal networks

I had a very interesting interview with a Danish manager, when I asked the following question, “Is there a place or database where you as an engineer can see what other labs or other people are working on in other units? Globally?” Their answer is quite revealing.

“No, it’s word of mouth. You need to talk to the right people and ask what is going on and visit once in a while.”

I followed our dialogue with a confirming comment to make sure I understood as I was quite shocked, “So you can miss out on a lot...” and they replied,

*“Yes, I think that is happening a lot. The only way of doing it is talk to somebody that has a **huge network**. So they would know somebody and you would go and ask and ask and ask...”*

Their answer made me think about the aim of creating a global knowledge network, therefore, I was compelled to ask about how this affected knowledge sharing, “...so not only is the network

somewhat invisible maybe this also contributes to knowledge transfer or knowledge sharing to be quite difficult..." They replied,

"Yes, I think it is difficult, also because of the initial effort to get to know each other; especially for engineers that is a tough task to try to do this kind of work." (DK017)

There are several interesting leads in this excerpt, however, I want to remain focused on the key issue—informal networks govern the formal networks. In a growing, multi-national organization, it seems contrary to the ambitions to use informal networks as a primary source of communication.

5.3.2 Networks are about Relationships

The first sub-theme concluded with the significance of informal networks in having a successful network. The second sub-theme will further explore the relational aspect of networks. There are five underlying concepts: 1) mutuality, 2) quality vs. quantity, 3) relationship maintenance, 4) association between decision-making and relationships and 5) a network catalyst person for new employees are all aspects of networks that place the individual and their interactions at the center and the data illustrates that maintaining healthy relationships is vital for successful networks.

5.3.2.1 Mutual Benefit is Essential

"But again networking only makes sense if there is a gain. And this has to be for both employees not only one. If you are delivering all the time you tend to back out of the network." (DK021)

5.3.2.2 Quality vs. Quantity

"When you use your network contacts only when you have a problem [contacts can] become a dead-end. It is not very inviting, especially when you are dealing with the distance issue. One should be very aware of this factor."

If you go from working with people locally to working with people internationally then individuals need to be prepared to communicate more often than they have done before. This creates 'alive' lines of open communication. So if there is a need to use the connection that it works. If it is not nurtured it will die or be of very little use." (DK002)

5.3.2.3 Relationship Maintenance

The following excerpt is from a Danish manager that has been working abroad; they discuss what they do in order to keep their network alive in Denmark.

"That is also why I try to have during my holiday one week where before and after here, you are not able to follow what is going on and the information flow is actually very slow. Because a lot of things are happening informally and this never is communicated in emails or Insites, etc. So a lot of information, (I have been here for 11 years) and the sources from earlier has been your informal network that you hear something, all of these inputs, are not available when you are sitting 8,500 km away. So you are really depending on a strong communication from your stakeholders (your network) from your management. So information sharing is really important. And I think for that. When you still have the majority of people sitting here, you also have the majority of the information here." (DK008)

5.3.2.4 Relationships affect Decision-making

"There can for sure be some people through the network that do pretty much what their boss

directs. So the relationships they have, if one has strong ties to someone, they can affect decision-making, absolutely.” (DK006)

5.3.2.5 Network Catalyst Person

The following excerpt is in reference to formalizing the link between new employees regardless of where we are logistically in the network and guiding them into the network as such reducing the ambiguity and possibly making the process smoother for new employees as well as for the organization.

*“After all, we can say that this advisory board that we use for our Chinese colleagues, could now also, in principle, easily apply for a Danish colleague. That is to say, **when we hire a new person, and that we know what they will be doing, you could definitely have a mentor or a network catalyst type person, that having been engaged in the network for many years could be able to assist new employees with who to contact; who has information, expertise or experience in a given topic area.**” (DK006)*

5.3.3 Networks are about Collaboration

The third sub-theme focuses on collaboration. The following two excerpts provide examples of Danish managers identifying how they have worked through specific situations where they needed collaboration to work between Danes and Chinese employees.

In the first excerpt the Danish manager realizes that it is about identifying personal as well as mutual needs to be successful together. The Danish manager needs to be less abstract and the Chinese employee needs to be more autonomous and self-lead, which is part of the Grundfos culture, if we look back to the culture theme. The second excerpt focuses more on the reality that innovation is not a smooth process from A to B and that perhaps a long-term perspective is helpful for foreign colleagues.

Danish & Chinese Global Collaboration- learning to communicate

*“You work together. For example, I needed somebody to do thermal simulations...so instead there was an opening for this job in China and there was actually somebody that applied for the job who could do it. SO I asked around and the head of the Fluid Mechanics department just got this application, this person might be the one and we hired him. And he is sitting in China and we do the video conferences every second week. **But it takes a lot of skills from this guy because he has to understand the Danish culture.**”*

Based on the above excerpt I asked the Danish manager a follow up question, “And how is it for you to understand the Chinese or his culture?”

*It takes some efforts because I have to think about it when I **communicate** with him. But I don’t think it’s that difficult.*

Again based upon the ongoing dialogue and the previous answer, I asked another follow-up question, “Do you think it is more difficult for him to understand the Danish culture? What are the things you can see that are either miscommunicated or difficult to communicate?”

“Actually yes, but the example I talking about is working out very well at the moment. In the beginning, was that when he got a task and it was not specified in details he just started doing it all at once and he failed every time. And what he needed to do was to chunk it down

and be able to do that himself and that is part is difficult to understand the Danish culture because you get the overall picture and please go ahead and you need to specify more in details yourself. So we needed to learn from each other. That he needed to specify more himself and I needed to give smaller parts of the job at a time.” (DK017)

Danish & Chinese Global Collaboration- innovation is not a smooth process

The following excerpt is from a discussion about developing a specific technology through global collaboration with a Danish manager. They make references to how chaotic the process of developing new technology can be. How people have to work very closely together in product teams and need to be able to explain their frustrations to one another and find new ways of solving their problems. According to this Danish manager, Chinese colleagues become disillusioned with this process, taking it personally that they are not able to succeed the first time they do complete their tasks.

“You know that I think it’s normal product teams. We’re sitting close together, talking together and try not to do a lot of paperwork but try to talk.... one of the big issue is that people working with something that’s really new, is to let people explain and tell it’s not working and why it’s not working...When we work with new technology, there are often... [Many changes, first one way] and then you have to go another way.

That’s the big communication and that’s extremely difficult for people in China because they feel it, “Aaaahhh, I’m not doing my job well,” I’m doing it right well but it’s not working because we have problems with this and this and this”. That’s... the issue.” (DK016)

From the above excerpt there is a link between learning and culture for collaboration to happen; learning that innovation and R&D is not a smooth process from A to B. Individuals need to do a lot of trial and error before identifying the right answer. This is also connected to the realizations about learning made in Chapter 7 R&D China.

5.3.4 Competence Networks

The last sub-theme, Competence networks, was first presented in Chapter 3 with the case presentation; it will be further expanded below. The following three excerpts all from Danish managers have been selected to set the tone for this last sub-theme: *urgency and necessity*.

“We are struggling to get this global organization to work and establishing these networks is part of it.” (DK025)

“Network mobilization-we are trying to focus on the networks but we are trying to find actually the first step we are taking there, this is turned out a little bit more difficult, we are actually trying to create a community, which then should invite in everyone who wants to share knowledge and share the interest of working in networks. (DK024)

“I have also heard of the WIKIs. I believe this is a step in the right direction. However, they are very much exclusive to Denmark, I think.” (DK018)

The data has revealed that many names (Wikis, Communities of Practice, and Competence Networks) have been used to describe what is ultimately the act of organizing flexible groups of

individuals that either work with a specific technology or have experience with it or have problems with it. The data is not in unison on this phenomenon; there are those that believe in it and others that don't, while even others that say that this is nothing new, it has been in Denmark for many years. This sub-theme has been further organized to cover the following four emergent ideas: 1) the structure of competence networks, 2) management's involvement, 3) the role of senior engineers and employee participation.

5.3.4.1 Structuring Competence Networks

The following two excerpts explore to very different aspects of structuring the competence networks. The first excerpt focuses on how the core team of the competence networks should be. While the second excerpt also from a Danish manager shares their frustrations with the complexities in practical terms of globalizing competency networks.

Does too much structure defeat the purpose?

"The CORE Team- We have not set any rules for the core team yet. One thing I strongly recommend is to have international presence; not a core team of only Danish employees. Beyond that it is up to the community manager to nominate the core team. One thing we still have to set up is role description for the core team. What is expected when you are a member of the core team? Should it always be appointed by the manager? Should it be a free set up? Or should it be a rotation principle? You could also consider that the core team is being elected among the community members. We have not decided how long members get to sit in the core team. I don't know how prestigious it is going to be part of the core team." (DK025)

Global Competency Networks

"But they don't exist. And to be honest I am a bit anxious about this. Because we have specialist groups based in Denmark. I tried to push at least one group to try to push for people from China into this group and I think, ok I know you cannot have a meeting then use the video meeting instead. But you cannot speak Danish in the meetings right, then you have to speak English. This has been a dead-end. It does not work at all. The competence group is globalizing the specialists groups. Specialist groups have they been around for 7 or 8 years and they are competency based, cross organizational so, they are one in the same."

These specialist groups core.... But perhaps that's the problem because to be in the core, it is not necessarily important that you are high level rated specialist. It might be more important that you have a good network. Because that is what it takes to run these groups, and it takes some effort to call up a meeting and set up stuff and share information." (DK017)

5.3.4.2 Expanding Roles of Senior Engineers

Grundfos R&D is a mature organization with many established employees. The internationalization of R&D can have ramifications on senior engineers. The following section presents two excerpts that focus on the role of senior engineers in the competence networks.

Acknowledging Senior Engineers

A Global Manager proposes concrete suggestions that they believe will enhance the competence networks.

"The mature people need to be measured in another way. They need to have acknowledgment that they actually share their knowledge and they need to see themselves as technical coaches"

*than technical engineers. That would be that the **profile of these participants needs to really be in focus**. I don't think all are relevant for participating in networks. If you don't have the right profile it could be actually very hard for you to participate and it could drain people's energy and stop what they are good at. **So probably a good engineer that is not the extroverted and does not like this networking he could actually become a poor engineer by forcing him into it**. So I think it is also about profile. I think that we still need some really deep hardcore specialist. But I don't think they need to be the driver of the group.*

*But if we ask these specialists to coach new engineers around in the global setup... Then we also have to **acknowledge these people who gain their energy from being in the front lines solving technical problems** suddenly you put them back here and another guy is staying in the front line. And what before was the driver for this person, was the acknowledgement for solving this problem and this is the boost they got from working and suddenly they don't necessarily get the technical acknowledgement for solving because they are not in the frontline. So somehow these mature people you put a little behind the others (coaching the younger ones) **I think it needs to be thought in how can we then put these (seniors) in the frontline**. By having a yearly event by where these networks are gathered and then there is the chief engineer, he is the head speaker, really also make events where you take these people you take a little behind now you put in the frontline and you give this acknowledgement for their expertise. I think these some of the elements that need to be thought into these communities.” (DK008)*

Reverse Knowledge transfer

For whatever reason, some senior engineers may not think that there is anything worth getting from participating in competence networks and perhaps they believe that knowledge and information will only flow one way. The following Danish manager disagrees with this type of thinking by opening up the perspective that engineering knowledge is infinite and there can always be something to learn.

*“You have to ask yourself, “What am I getting out of being in this network?” Working in this technical world there isn't like five competences you need to carry and then you are just better and better. There is always a new field you can start to work on, and within your expertise areas there are for sure a field where you are not the highest rated expert in the world. So there are some fields where these other persons in the group that [that will have this] expertise. **SO please don't expect them to be a copy of yourself**. Maybe these people know something else and you can draw on their knowledge.” (DK017)*

5.3.4.3 Employee Participation

Without employee participation competence networks will not serve their purpose. The following excerpt from an interview with a Danish manager explores some issues of how these networks are perceived by Chinese vs. Danish employees.

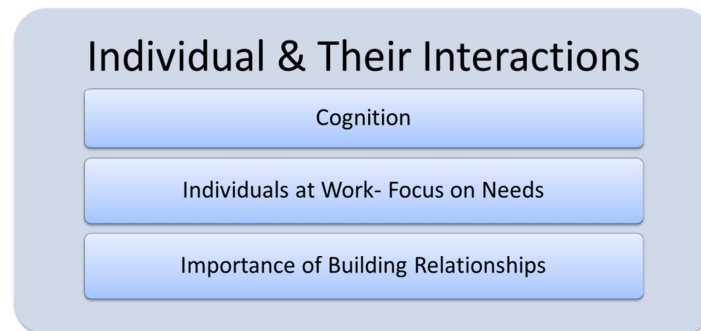
Anticipated Employee participation- Chinese vs. Danish perspectives

“Chinese employees will participate if they feel there is a benefit for their career advancement or for optimizing their competencies. Also Chinese employees will participate if their manager says they have to. There is much more discipline whereas a Danish employee will argue if he cannot see what it is for him, then he will only do it if he finds it funny or if it gives him personal development, knowledge or boost.” (DK008)

5.4 Individuals & their Interactions

The fourth theme uncovered from the data for R&D Denmark explores the individual and their interactions. So far the role of individual and how they behave has begun to have increasingly greater significance. This theme is organized into three sub-themes as illustrated below:

Figure 27- R&D DK: Individuals and their Interactions theme- presentation of sub-themes & their underlying topics



5.4.1 Cognition

Value-based judgments- the whole is built up upon the parts

The following excerpt from a Danish manager explores how individuals need to show all aspects of themselves because others are putting together a picture based on everything they experience. This manager uses the Danish word, “helstøbt” that represents the entire package. It is revealing that the individuals that are working in these networks are ‘in it’ for the long-haul. This alludes to the importance of trust and mutual orientation in working together.

“I believe one should (helstøbt) be able to show all of you because we make judgments upon many things. Not only based on the roles that one is fulfilling in the short-term but based on the person at all times. It is very important.” (DK010)

Focus on identity not just culture

The following two excerpts explore what I have observed and continue to observe that it is about people and not so much about culture. Culture is important but we seem to lose perspective when talking about culture.

“It is more about what kind of person are you (instead of what culture you come from).” (DK003)

“How do we want an R&D person to react? I think it is more interesting than focusing on the cultural differences and how do we influence people to make a change in their way of reacting but also cultural change is also very very difficult. (DK021)

5.4.2 Individuals at Work- focus on needs

The following three excerpts explore individuals at work. The three excerpts expand on what employees need from a managerial perspective to succeed individually and together improve collaborating together.

Knowing how to network and building your own network are essential. The last excerpt from a managerial perspective explore giving employees an opportunity in developing the organization with the mindset that being invested in something more than just a job will empower employees and enrich the organization.

Competency Development- Networking

*“When I say not forcing it means that we will see here that in the coming years that as part of the jobs there needs to be networking. and there will be fewer jobs where you can actually be specialist and not do networking. It means that either we should say that we expect of you to do this networking or you should take one of the few jobs as specialist but that could be a situation where there are not enough specialist jobs at all. But then we talk about having a **change in their employee profile, set up in the whole organization**. I would not be surprised if we would see that happening over the coming years. Also people leaving due to this because they don’t like it. Maybe they go to a smaller company where globalization is not such a hot issue. Where they can be specialist. I don’t think you will get anything good out of forcing people into it. But when that is said, I also think that we should be pretty **clear** about our **expectations** and the coming work profiles for R&D engineers most of them need to be able to network also. Then some few can be real specialist and don’t think about network but a **big part of the organization needs to be a good networker**.” (DK008)*

Build your own network

According to this Danish manager the size and strength of your network can be a determinant of your success.

“It is extremely important that you build up your own network. You have to find out who in the organization can help me to accomplish my tasks. The stronger you are in building networks the more efficient you will be in the work.” (DK021)

Investment Empowers

The following excerpt from a Danish manager refers to giving employees the opportunity to be invested in the company and through that action, empowering employees. In other words, if employees are part of creating the organization, then it is more than a job.

*“I would just take a phone call and e-mail; bring people in so they feel they are part of it. I think that if you just get [told by your boss], “okay please do this, this and this” Yes, of course if you say I have to do it... but if my manager is calling me and says, “Okay, I want you to do this now,” explain what’s it about and let me be a part of this dream or whatever, that is much more easy. **If it’s possible for you to make people feel that they are important, that they are part of a dream, they are part of something big and they are responsible for what they’re doing, then... then.....**For example, if we have to do a presentation for the top management, bring in the people! It’s not me who should do it; it’s the people who have done the job. That’s one way to do it.” (DK016)*

5.4.3 Importance of Building Relationships

*“The overall idea is that we are going to work together as if we were sitting under the same roof. I think that is how [management] told it once and for that to happen we require/need some collaboration tools and IT set up that support it but we **also need to establish relationships between people.**” (DK025)*

Should anyone ponder why there should be a focus on establishing relationships, then I will reference the above excerpt from a Danish manager that cites the Group Strategy and the need to work together, in other words, build long-term relationships.

Relationships were explored under the last theme: Networks, however, there the focus remained on networks. Here I will further explore relationships by focusing on four practical aspects of building relationships in knowledge networks; these are substantiated by the excerpts below.

Building relationships- difference between internal & external

*“You’re trying to build up, if it’s with the external partners and it’s at the early stage, which is browsing around, trying to find out, who can do what and where could we have interest in common. **There’s not that much weight put on the relationship. But it is a different thing, when you’re trying to build up relations in the company, long lasting hopefully.**” (DK012)*

Establishing relationships in the network; more than a job...

As previously mentioned under the Network theme, networks are about relationships and the following excerpt exemplifies the importance of building and nurturing relationships.

“It does not matter what culture you come from, it is very important to be able to communicate. It should not just be problem solving communication but rather also when you do not necessarily need the person, ‘how are you doing?’ and such things.” (DK002)

Influence through relationships

When we were discussing building relationships the Danish engineer added that, *“then it is relatively easy to influence things [change in the organization].” (DK006)*

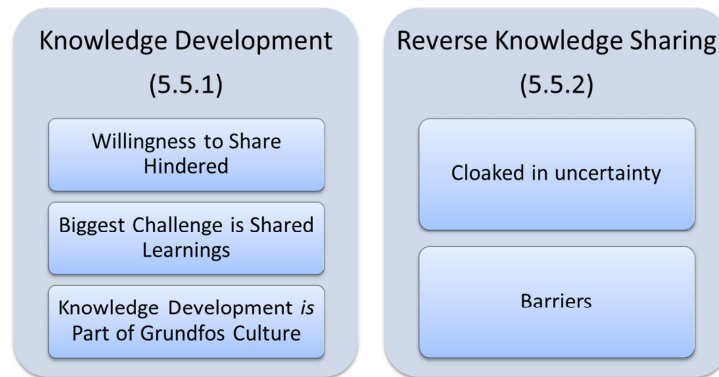
Chemistry is important for collaboration

*“Yeah but for me it’s very important to come around and just talk with people... “Do you know somebody who knows something about this” and then just call them and send them an e-mail. I think it’s important to go for the best people! (**Chemistry**) and go for people you would like to work together with. If you have the best people and you don’t like it, you’ll never meet the target.” (DK016)*

5.5 Knowledge & Learning

Theme five, knowledge & learning is focused on the importance of Grundfos being able to improve collaboration throughout all R&D units. Two sub-themes are identified to explore knowledge development and reverse knowledge sharing.

Figure 28- R&D DK: Knowledge theme- presentation of sub-themes & their underlying topics



5.5.1 Knowledge Development

Willingness to share exists but other barriers get in the way

*"It is extremely easy to find access to help within Grundfos culture. We are good to share our knowledge. And I also believe many in our global units have also experienced. It can be that sometimes it is not successful due to **other barriers**... it can be difficult over a phone; it can be it does not happen so effectively. But I don't believe it is a lack of willingness to share. But on the other hand I am sure you could find particular examples, **but in general in the organization there is a willingness to share.**" (DK010)*

Biggest challenge is shared learnings

*"One [challenge] is that we need to drag the **learning** that they have done, probably some other part of Grundfos will be able to do something based on that learning and of course we need to find out how are we actually then **integrating** it to the extent that there are some basic rules that we follow. So it is not that this department goes in this direction and purchasing goes in this direction. It needs to be **aligned** to some extent." (DK024)*

Knowledge Development is part of Grundfos Culture

The following excerpt exemplifies how team work and collaboration are necessary for developing new ideas and technologies. This Danish manager explains how the knowledge one possesses will only live on and increase if it is shared instead of protected. I sense that this has been part of the Grundfos R&D Culture for many years, an unspoken or unseen cultural artefact and this will need to be made explicit so that future generations of Grundfos R&D knowledge workers throughout the global R&D Network understand this core value.

*"I have also experienced people that come to Grundfos from other organization that are overwhelmed at how much we are willing to share our knowledge. And in other organizations people say that my knowledge is my value. **And if you can simply put it, I think you can say there is a good understanding that survival is not contingent upon protecting your knowledge but rather in developing it and you do this by sharing it with others.**" (DK010)*

5.5.2 Reverse Knowledge Sharing

And that brings me to the second sub-theme, reverse knowledge-sharing, because I see that, it could be, maybe expected of Danish employees to share their knowledge with their Chinese colleagues? But then I am curious, as to how it is for Danish employees to be open and aware of the possibility of learning from their Chinese colleagues. The following two excerpts below are from Danish managers and focus on the varying perspectives on reverse knowledge sharing and barriers to it.

Reverse knowledge sharing-cloaked in uncertainty

In the following excerpt a Danish manager discusses how reverse knowledge sharing is impacted by all the very many changes happening in the organization, such as restructuring, the Innovation Intent, the expansion of R&D activities as well external factors such as the financial crisis.

"I think many many different opinions in that way- from the very scared people who thinks that they will lose all the work and the job in the final end. On the other hand there are people who really see a possibility in the teamwork and by working together with the people in other cultures.

I think it is improving because one year ago when we started with our new organization [structure] and we have made this set up with the global R&D organization, there was a lot of uncertainty in the organization about what will happen now and so on. And it was not better when we started firing people due to the financial crisis and not because we want to move work towards foreign countries. But I think, it has improved again because we have always said that we will be an organization on the same level here, man-wise and we shall help build up the organization in other countries and also, due to the fact that [management] has a vision that we will grow a lot in the next 15, 17 years. People also understand that there is a lot of possibility and that we will not just lose work from Denmark to China. There will still be a lot to do, even in Denmark, even if we go to the same size in China, and also big organization in the United States and maybe also in India. So there will be a lot of work, still to do. But it will change! It will not be the same. And I think people will understand much more now than they did one year ago." (DK004)

Barriers for reverse knowledge sharing

This excerpt illustrates the insecurities that linger in the organization regarding expanding outside of Bjerringbro, Denmark and how this attitude affects reverse knowledge sharing.

"But I think what we can hear in the organization is still that some people are saying, "ah we take that to China" because that is just the work we have to do... And with that mindset and with that attitude, then you definitely there would be some difficulties to get knowledge straight from China to Denmark." (DK005)

5.6 Communication

The core is communication

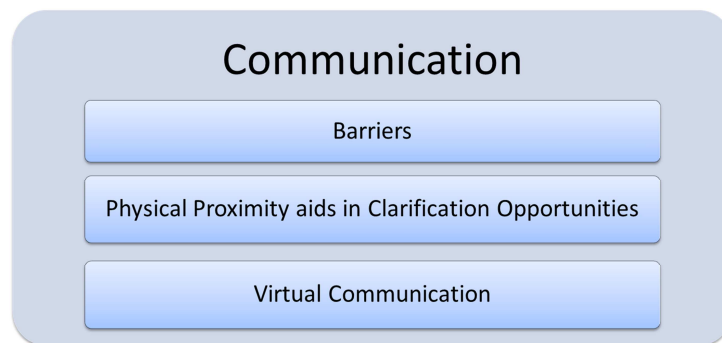
I begin with the following excerpt from a top Danish manager that exemplifies the importance of communication in this context.

*"I think all in all, all of this is about being **really sharp at communicating**, extremely good at it and how is it exactly that we achieve that? I think that the individual tries their best in saying exactly what they want to communicate. But how do you assure [it is understood]?"*

*What are some tools, channels, that one can use to communicate with and how do you adjust it so as not to over communicate. There is enough information out there [in Grundfos] **but how do you get across and really deliver the meaning of your point. I truly believe this is the core all of the other stuff; in order to get the network organization to work.***" (DK010)

The last theme, communication is organized into the following four key sub-themes identified in the data:

Figure 29- R&D DK: Communication theme- presentation of sub-themes & their underlying topics



5.6.1 Barriers

The first sub-theme, barriers presents three barriers: 1) access to the right information through the right people, 2) the significance of language in understanding others' cultural nuances and 3) learning to communicate in a high change environment leans heavily on trial & error.

Access to the right information linked to right people

*"Myself, what I am trying to do is, I am trying to communicate **EVERYTHING** I find relevant. But even though I am forcing myself to do that, then I can see that some **information is missed by the members of my organization, which are not sitting here in Bjerringbro**, because, you could say, The people sitting here in Bjerringbro are also getting information from other sources than just me... so it is an extremely difficult task to get the right information to the right people at the right time."* (DK005)

Language is fundamental for deciphering cultural nuances & creating common ground

When I first moved to Denmark I did not understand the Danish language which in turned created a figurative wall limiting my access to Danish society. However, through becoming proficient in the language I was able to gain access to meanings, understandings, and perceptions. It has provided an opportunity to identify many of the Danish ways of being. It has helped me begin to ask questions, so that I am able to base my understandings not only upon my own background and understandings but also with the knowledge of a variety of Danish perspectives. The following two excerpts exemplify how understanding a language can help understand cultural nuances, creating common ground.

"If you understand the culture and the language then it does something where you have an easier time establishing a relationship." (DK019)

*“There’s a lot of unspoken words in all conversations that don’t have to be there because you have some **common knowledge** that can fill in all the gaps in what you’re saying. It could be for example ways of doing projects, you for sure, don’t [expect] that new people who come to an organization to know. (DK012)*

Learning through trial & error

*“It will be very difficult when we **experience language barrier, time barrier and cultural barrier**. So we experience sometimes with China where we agree upon some things and they say yes and agree but they have understood something else altogether. They of course work diligently upon what they have understood. So, **it requires a lot of repetition and many ways of saying the same thing to align aims.**” (DK010)*

5.6.2 Physical Proximity aids in Clarification Opportunities

The following three excerpts from Danish managers all point to the importance of meeting face to face. In a Danish context it provides opportunity for clarification and in a Danish/ Chinese context it provides an opportunity to place a face to a name and create relationships where to build on.

*“We know that even though we are all Danish and we sit in the same room we can misunderstand one another. So **in general, we can clarify and resolve them pretty quickly because we work in close proximity to one another so we experience, “oh no, that is not what I meant with that word.”** (DK010)*

“It is clear, yes, we do of course have experience that those that meet F2F, it makes it easier and the Chinese employees are more prone to come and ask if for assistance if they have met in person. This is true.” (DK006)

*“I know that we cannot travel all the time. Web, chat, telephone but once in a while it is important to see one another. **If you have to work together than there is a need that people meet face to face once in a while.**” (DK002)*

5.6.3 Virtual Communication

A cheaper alternative to traveling is web conferencing, a form of virtual communication which allows individuals to see and speak to one another. Web conferencing coupled with another software (Sharecon) that allows for sharing of computer desktops provides ample environment for communicating daily activities. However, these new technologies do come with their own idiosyncrasies, for example, *“technical delays that create behavior patterns”* (DK006). In other words, people have awkward stops in communication which hinder clarity of message.

The final sub-theme presents three excerpts from one Danish manager that candidly shared their experiences with virtual communication. The following three accounts focus on the following three aspects of virtual communication: 1) meetings are robotic, and may feel staged, 2) based on this managers experience virtual meetings are best used for one-on-one meetings and 3) face to face meetings are important, especially since virtual meetings are task-focused.

Virtual meetings can feel robotic

*“I don’t think you can feel it in the same way there and I don’t really don’t know if it will work as good just having lamps signaling that now I want to interrupt because **a meeting is not a democracy**; it’s not a place where you say, ‘oh this guy is saying I want to interrupt so let’s give him some time’. It’s a place where you keep on talking. If you feel that it’s your right to talk and ... **everybody has their own agenda** and it may be that the person who wants*

to interrupt you ...already sort of know what he's going to say and really you don't want that to interfere with what you're saying so you keep on talking and hope that, at a certain point, he will forget about his comment again.

*I mean I'm very rude in my way of saying it but that is how many meetings and so... **one thing is that everybody has their own agenda, everybody has their own picture of 'what is it I want to achieve' and 'what is it I'm hoping that we, as a group, will achieve at this meeting'** and it's a balance between that and still having some **social contact** - showing that you're open to the entire group and open to letting people talk, so you also **promote** yourself as a very open person by showing that and you're saying so. But if you **don't feel** when people want to say something and don't allow yourself to show this kind of openness to group thinking then I think then the solution could be something like yeah showing a green lamp but then you can't just let people talk whenever they show the green lamp and just let it go and turn, "oh now it's your turn to say something." (DK012)*

Virtual meetings are best reserved for 1-to-1 meetings

*"I think I've only had one meeting, where we were **many people discussing** and many, that meant 3 persons from here and 4 persons on the other side and at that point, we were mainly 2 persons talking. I did a lot of talking from our side and there was one person on the other end, who did a lot of talking and the other ones, I know, at least down there, they tried to interrupt a few times, but it was difficult. **I think the sense of seeing that somebody wants to say something, it's harder than if you are looking at a screen with not the very best resolution, even though it's a good picture, but you don't sense it in the same way as sitting next to somebody, hearing that's he's breathing a little bit more and more and being a little bit tensed because "hey come on I want to interrupt now"**. I know that there are ways of handling it. I've seen, I can't remember which program that you can even have, like, green lamps at the bottom where people put up a green light if they want to have time for speaking and maybe that's going work. I don't know. But, it's again, this cultural atmosphere that you feel if you're sitting in the same room. You can feel the tenseness of people who are starting to become annoyed of not being heard enough and where you give room to well, okay take a deep breath and ahh let the person speak... but I don't think you can feel it in the same way there and I don't really don't know if it will work as good just having lamps signaling that now I want to interrupt because a meeting is not a democracy." (DK012)*

F2F is most important & virtual communication task focused

Virtual Communication is not a replacement for F2F but rather an option to save costs and be more efficient when you need quick discussions on a matter. According to this manager virtual communication is a supplement for face to face communication and not a replacement.

*"At least, we have agreed that's a common vision, both from their side and from my side that we would start using that to get more....but I think it has made a lot of sense to actually **meet in person a couple of times first, so that you know each other and has been sitting in front of each other and talk, also just small talk**. You don't do a lot of small talking on a video conference. You don't get to know each other. You don't ask about family things and things like that. Well, why would you? I don't know. Maybe, maybe that culture will come but right now I think people are very much focused on what is it we want to achieve when you're sitting at a video conference meeting. That can be a good thing and maybe it's a thing we're lacking at other meetings sometimes but I don't think you pass a lot of cultural information in such meeting." (DK012)*

5.7 Summary of R&D Unit- Practical Considerations

The R&D unit in Denmark also has had difficulties working across cultures.

There can be a number of explanations to this phenomenon. One reason that sticks out in my mind that was shared by one employee, they tell of the process by which projects are designed. They go on to explain that if a specific project has a certain budget it would be more economically sound to choose the staff from Denmark there by removing the need to (1) have to travel to meet in person and (2) have to use the virtual mediums available to communicate with global colleagues. They go on to say that most project managers opt for Danish project teams as it makes the process much easier.

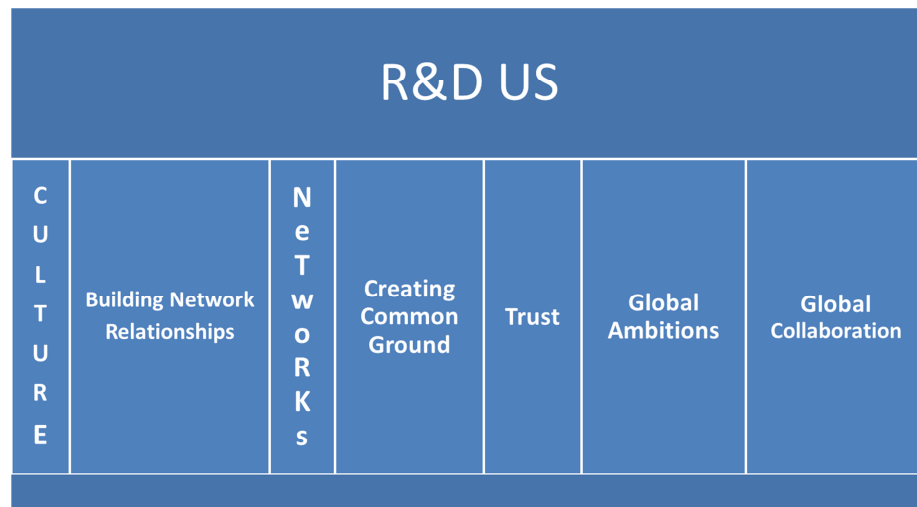
On the other hand, there are many employees that are passionate about working with their global colleagues and earnestly make a continuous effort to create a welcoming and safe environment as is written in Grundfos Group strategy, “where we feel as if we were working under the same roof”. There are Grundfos R&D efforts in certain departments to facilitate improvements in global collaboration, such as Global Facilitators that group together with both sides of a project team to mediate when necessary. Also Grundfos R&D has initiated a virtual network much like communities of practice that are based on competencies in such technologies as Fluid mechanics, for example. The idea is that through competency-based virtual networks employees can get to know one another and that information, and expertise be exchanged.

Being in the BD building is like visiting a successful ant colony where as a newcomer to this environment you can quickly acknowledge that what superficially seems like chaos is quite structured by the network participants. There is indeed a visible network that connects employees to one another through projects, whether, past, current or future, by shared area of expertise or the need for an expert in an area that is unfamiliar, by processes, by company missions, or employee driven initiatives, such as the globalization committee or by any number of company initiatives.

6 Grundfos R&D US- Identified Themes

As indicated in the case presentation in Chapter 4, Grundfos has had a presence in the US market since 1973, however only recently, since 2004, has there been an R&D unit present in the US headquarters. The following figure reveals the eight primary themes identified through this preliminary analysis of the emergent data found in R&D US. This chapter further explores each theme through sub-themes and corresponding excerpts from the data.

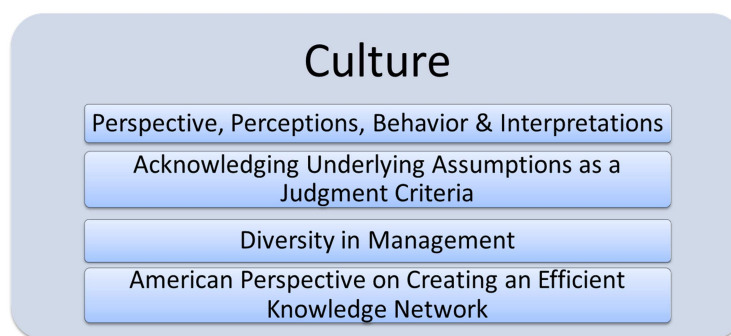
Figure 30- Seven Primary Identified Themes for R&D US



6.1 Culture

The first theme, Culture, is organized into the following four sub-themes presented below.

Figure 31- R&D US: Culture theme- presentation of sub-themes & their underlying topics



6.1.1 Perspective, Perceptions, Behavior and Interpretations

"I was truly impressed with the knowledge; the collective knowledge that was in that room...very impressed with some of the peoples' communicative skills. [However, I] also saw in some of them [sitting with]"closed armed"; [in other words] I am here because I have to

be not because I want to be. It seemed split.” (USA003)

It is our underlying assumptions that guide how we perceive and ultimately behave with the world around us. While it is important to acknowledge that people may do things differently based on their own assumptions and experiences it does not stop us from analyzing and making sense of our environment. The above excerpt is an account of an American engineer recalling their experience at a global meeting held in R&D US. Their account illustrates how they perceived their Danish colleagues. This individual made an evaluation of the context. As a result, it was clear for them that some of the meetings participants had mixed feelings about their participation, since according to this interviewee they did not show enthusiasm and some sense of desire in comparison to other participants.

*“It would be easier if the world would just do it the same way that we do it here in Europe, right? And so ALL of us are creatures of trying to find the **simplest solution to very complex problems**, And I think, that is the one of the fundamental challenges, and that doesn’t even touch the, you know, the cultural differences and so on.” (USA001)*

Not everyone may agree that we are all trying to find, “the simplest solutions to complex problems”, however, the significant point here is that all will approach finding solutions through our own understanding. This thinking can be understood as an individual’s **internal compass**. In most everyday situations human beings never consciously realize what is under the surface guiding them. The differences in how individuals approach things is directed by the underlying assumptions that guide how they perceive; for instance, this particular interviewee, based on their statement, can be perceived as efficient—someone that does not over speculate or spend too much time making decisions. While another person could actually enjoy the process of deep evaluation, contemplation and reflection of complex problems, it definitely would not be the simplest solution, according to this interviewee.

6.1.2 Acknowledging underlying assumptions as a judgment criteria

“We have, everyone- all of us- we all have a.... I am going to use words that maybe [are] overly strong but it is only to make a point. We have a geographic and /or cultural prejudice. We all have these. Just by nature; we all grew up somewhere, in some context and learn ways of doing things, ways of communicating and to some extent, we will always believe that those ways ARE the right ways.” (USA001)

The point made in the above excerpt brings up a good point regarding acknowledging personal assumptions that color how we perceive the world and how we interact. It is about self-awareness and awareness of others... The prejudice the American Engineer talks about here is also related to the underlying assumptions. These categories individuals use to make sense of the world, it is human being’s nature to understand from experiences, however, when they are used to understand or judge others they become assumptions. It is an issue as the interviewee alludes to when individuals become bound by these assumptions and/or categories and are not able to adapt to see other perspectives; this causes what I would call **cultural blindness**—the inability to register the existence of other potential ways of viewing things in any given context. This creates a unique situation as the

interviewee states where individuals become indignant that their way is the only right way of doing things.

6.1.3 Diversity in Management

“One of the things that undermines my personal confidence in our commitment to this global network is when I look at our organization and say, “who are in the top chairs in our organization?” It seems to me, still, as though you have to have the right color of passport in order to get to those positions in our company. Now, is it really true? Have we set that as a globe or-as a company vision OR are we simply defaulting, in my mind, to what we [humans] tend to do; hire somebody similar to one’s self?” (USA001)

*“So have we set out as an objective to try to put specifically, you know, **Danes** in the position of top power- everywhere around the world.” (USA001)*

“Is that better for Grundfos as a global network, that our region is represented by a Dane? Well, I don’t know, that is a question for us to ask. But it makes me think that we are, as an organization that we are setting up the model, the value is one that basically says Danes are a little bit better at these leadership roles than everybody else in the world.” (USA001)

Does it make a difference for Grundfos to have leadership positions filled by non-Danes? For Americans, diversity means that there are different cultures and ethnicities that participate with equal right. While for Danes for example, the concept of diversity and its meaning comes from the word diverse in that everyone should have the opportunity for a wide range of choices; good life quality and does not have to do with employing a variety of cultures. What is interesting here is the dichotomy of perception between Americans and Danes with regards to a concept such as diversity and how it can further influence how, in this instance, management is perceived.

6.1.4 American Perspective on Creating Efficient Knowledge Networks

*“Well, I would probably, in very simple terms I would probably say, for one, I would make sure that systems exist to allow that knowledge transfer; So if that’s competency mapping for the young guys, pairing them with mentors and/or setting up training programs for them on some kind of an interval until they reach the competency level that was originally destined for them or designed for them when they were hired. On the other side of it, as resources mature all you can do, is **you can coach people up or you can coach them out**, if resources that have knowledge bases and competencies that we desire “don’t play ball” so to speak. If they’re unwilling or unable somehow to learn new things from the young guys or share that knowledge with the new guys, you know, give them opportunities to change their ways. Otherwise, find other things for them to do and/or get them moving on their way out. You know you have to **make a culture**, you have to put systems in place, you have to manage that and if people don’t get on board, then you have to find something new for them to do or you’ve got to coach them to go somewhere else.” (USA005)*

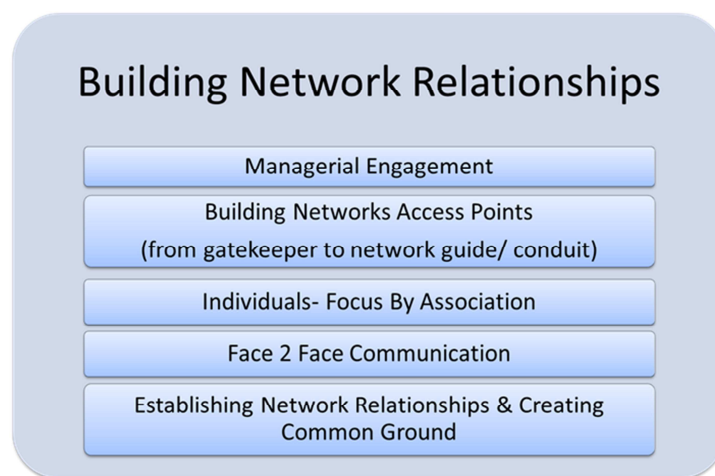
From the above excerpt this American Engineer believes it is important to ‘clean house’. In the above interviewee’s eyes it is important to give new employees as well as current and senior employees the best opportunity to connect and grow in the organization. However, having said that,

they also believe that Grundfos may be too lackadaisical on how they make sure the organization remains fresh and working efficiently without any 'dead weight'.

6.2 Building Network Relationships

Theme 2, Building Network Relationships, is organized into the following five sub-themes presented below.

Figure 32- R&D US: Building Network Relationships - presentation of sub-themes & their underlying topics



6.2.1 Managerial Engagement

The following excerpt is from an American Engineer traveling to Bjerringbro, expressing the lack of perceived interest that was shown by Danish managers.

"Taking the time to meet or show interest in visiting managers is important." (USA003)

This is with regards taking a meeting or showing interest when managers visit Denmark from other R&D units. This can probably be viewed in several ways, I am choosing to focus on the following two ways: culturally and from a network perspective. From a cultural perspective, the American Engineer understands the importance of making good impressions, of maintaining good networks. The act of not meeting with this American Engineer and stating a reason as too busy sends signals of "you're not important enough to make time for". From a network perspective, especially from one of global collaboration, it is incredibly important to maintain active and healthy network relationships. Here too, when someone that participates in a network context feels that they were 'brushed off' because their Danish colleagues were too busy, their sense of significance and value in the network is reduced, and this has an impact on their sense of purpose and motivation.

6.2.2 Building Networks Access-evolving from gatekeeper to network guide/conduit

“The mutual benchmarking and the mutual cooperation and assistance just started to happen and as I built upon that experience, I was able to further call on colleagues that I had now known for, you know... four or five, six, seven years. So, in my role now, in addition to just those years of experience, I also have a supervisory role... I have two persons that work for me, and part of my role with those persons is just to expose them to those networks so they can utilize those other experiences and those persons.” (USA005)

The above excerpt from an American manager discusses the idea that it is important to nurture the relationships that develop through the tasks that an employee has been a part of. And for their employees it is important for them to be a link in the chain as to help make connections to keep the network alive. This point is about using, adapting or changing the network so that it works best to serve their needs.

The manager provides a level of **trust** by linking individuals together; it is based on their trust relationships that others are given a chance. So, instead of coming in as total strangers they have support and are 'sponsored' or represented by the manager. This individual exposes other network participants and by doing so expands the potential of the network to cultivate new knowledge possibilities and create innovative solutions, creating multi-dimensional solutions for singular contextually related phenomena.

6.2.3 Individuals- focus by association

*“Everyone does it. Humans do that. I am much more receptive to somebody that I know, getting an email from them, than someone that I have no idea who they are. You know I will get back to them, but they will not be on the top of my list to get back to them if I don't know them. If I get something (email) from someone I know over there, yup, then I will get back to them pretty quickly, usually. The other ones, I will get back to them in a day or so. The information you send back to them is probably a bit more generic, and short. **Yes, I prioritize people I know.** Unless the email says urgent, I will prioritize my work by whom I know.” (USA002)*

The above excerpt from an American engineer, poignantly illustrates the need to create associations with others in order to find purpose in communication. Furthermore, they state, “I prioritize people I know”. Why do we do this? Is this based on our needs, on our desire to gain their trust and build up a relationship? What is it that motivates us as individuals? One theory can be that it is not necessarily the importance they place on their needs but rather how important you perceive their needs to be in relation to your relationship with the person that is predictive of your desire/choice to prioritize them.

This goes hand in hand the human capacity to create, maintain and nurture relationships. Some individuals are better than others at doing as such; however, every individual has a limitation for how many people they can “prioritize”.

6.2.4 Face2face Communication

“It is interesting, there is a big difference when you try to communicate with the members over there [DK] and you have not met them yet compared to when you have been there and you have had dinner and you drink a few beers and you come back. There is a huge difference between the two.” (USA 002)

This excerpt from an American engineer is describing a successful example of how associations have been accumulated for him in the past. These experiences have helped them in establishing relationships and lines of ‘priority’ throughout their network. **The issue this is touching upon here is that it is not enough to have established distinctions of priority in your network relations. It is also contingent upon how ‘important’ or ‘valuable’ you are to others in your network(s).** This is the case in the US R&D unit, at this moment in time they are more valuable than they were upon the establishment in 2004, however, based on the data, there is still a need to create awareness and this is partly done through **influence** and partly through establishing **credibility**.

6.2.5 Establishing Network Relationships & Creating Common Ground

“We see it first-hand here. WE had a group of 7 people and two were expat project managers that have been with the company for 12-15 years so they had a good network established with the guys at the development center. So when we needed help on the projects we knew exactly who to go to ask the right questions. So we didn't have to fumble through and learn who we needed to talk to. They were able to put us in touch with the right people.” (USA0004)

In the above example network relationships are extended off of senior employees; this is a great way to gain both influence and credibility necessary to be noticed. It is their reputation, influence that grants access to newer members. Managers are willing to do it, since they are on-site and have themselves established relationships with newer network members and therefore can act as liaisons to the Global/Danish network.

6.3 Networks

The third theme, Networks, is organized into the following five sub-themes presented below.

Figure 33- R&D US: Networks - presentation of sub-themes & their underlying topics



6.3.1 Referrals & Sharing Can Only Take You So Far

“[Sharing knowledge] on referral basis on who you know and will share the knowledge is pretty limited. It seems that it is pretty typical of Grundfos and Denmark. There does not seem to be a lot of documentation on certain things. It does not seem to be a lot of rules and processes; it seems to be very organized on who you know. [For example,] “Go talk to this guy...oh yeah this guy is the one for that, I used him in a lot of projects.” (USA002)

The above excerpt from an American engineer is an example of how complex it can be for global colleagues to navigate through the Grundfos labyrinth of relationships, i.e., the knowledge networks. Establishing relationships and all that pertains to it such as building a common ground, understanding how others communicate and what they mean, evaluating their credibility (as mentioned earlier) and knowing how to trust them, to what degree and in which context takes time. This engineer believes that this method of organization will make it very difficult to collaborate globally and reach Grundfos global ambitions explicated in the Innovation Intent, which is specifically referenced in this interview.

6.3.2 Re-learning Collaboration Processes for a Global Context

“And this is what makes it really difficult without having formal processes on storing documentation and things like that. ...[for example,] you’ll say, “Hey just send me over your design journal on this thing and I won’t have to bother you again”. And they’ll say, “well we didn’t do that, go talk to [this guy].. We just go down and talk to this guy whenever we want to learn about it.” (USA002)

Since Grundfos is no longer limited to Bjerringbro, Denmark management needs to begin to reconsider how it structures the way individual employees and their corresponding groups, teams and departments communicate, cooperate and ultimately how they collaborate within a global

context. The above excerpt is an obvious example of one of the issues that is clogging the networks in Grundfos. The assumptions that are being made by the employees in Denmark are indeed those being perceived by the US colleagues (explained in other excerpts). For example, American employees have perceived such things as, “they don’t care about us”¹¹, or “they don’t know who we are or what we are capable of”¹², and when addressing the above excerpt this not caring is actually that Danes have no concept of what it is to be outside of the network, outside of Bjerringbro, trying to get access to information and people. By assuming it is ok to just go, “talk to that guy...that’s how we learned about it...” it is neither a sufficient form of collaboration nor is it efficient for getting work done. Seen from this understanding the employees not located in Bjerringbro have three roles, they are detectives, journalists and then engineers: Detectives because they need to search and identify the correct information, Journalists because once they have found the correct information it is in their best interest to go back to their local colleagues (as well as anyone else in their networks that may have a need or interest) and tell their story; spread the word. And lastly, after all this work, they can do what they came to do—engineering.

6.3.3 Matching Our Processes to Our Goals

“Well that’s great when you are in the same building as them and you can walk over a couple cubicles and sit with someone for 20 minutes to learn something but it is impossible for us here to be able to do that. Well not impossible but difficult. Well it is impossible if you are trying to create global network organization. It is not efficient at all. If you are duplicating things now imagine what’s going to happen when you reach 75,000 people forecasted for 2025.” (USA002)

As discussed in the previous excerpts’ analysis it is important for employees at Bjerringbro to re-learn how to collaborate for a global context. It is important to point out here that employee’s need guidance as to how to proceed. At the time of this study Grundfos was 18,000 strong around the world. With ambitions of growing the company in the next 10-15 years by over 50,000 people, it is important to consider processes that connect employees.

6.3.4 Knowledge Sharing; Changing Behaviors—adapting

“I don’t think that the [Danish] lab trusts the North American locations yet because they just don’t know what we do and what we are capable of. It’s a trust thing and I don’t mean it in a negative thing; it’s about the newness of the collaboration. Think about it, Denmark is being asked to open their minds and expand their horizons and it’s just not something that they are used to.” (USA003)

It is important to not take this out of context. The above excerpt from an American Engineer is based on the reflections of an individual dealing with access issues within their own organization. They feel that they have to win their colleagues trust in order to begin collaboration. In the process of their reflection they interpret the age of the organization and the lack of having to collaborate in the past as indications for the difficulties that they have encountered. Also, from an engineering culture perspective Engineers working in a global or international setting have been constantly warned

¹¹ See Access, trust and knowledge

¹² See Knowledge sharing; changing behaviors—adapting

against sharing knowledge and information and the risks of it being copied or leaked. This can be another reason that individuals are hesitant in trusting and sharing their information and knowledge.

There are two other important aspects to be taken into consideration in this excerpt. One, when the interviewee says, “they don’t know what we do and what we are capable of...”, they make a point that has come up several times already under other themes and that is about **understanding** coupled with **associations** and **perceptions**. One could infer that what the interviewee is saying is that if they knew us and what we did, and our competencies then they would trust us. Association is at the core of trust because it makes up for the basis of how we understand and perceive the world around us. Hypothetically speaking, I believe that it can even be taken even further and more concise, if they knew us they would trust us. This brings me to the other important aspect to consider that being **trust**. Trust may seem like a simple construct but when you begin to define it and make sense of it, it gets complicated. For the interviewee it remains relatively simple...if you knew us, you would trust us. And what does it entail to be trusted, in this context... For the interviewee, it means to be thought of, to be understood- as a valuable contributing member of the global network and not as an afterthought. If you don’t know me, then how can you trust me? Thus, trust has the possibility to emerge and grow at every encounter, initiating/developing a relationship by interacting.

6.3.5 Building Networks-passing the torch

“Keeping that spotlight on for all the new people... As we grow and we bring these new resources in, part of their program for being a new hire is to go through with all the department chairs, all the department supervisors and those are the things that should be on their list. For example, for me when someone says, “Hey I’ve got a new hire, can I have them spend a few hours with you?” No problem. I have got a 2 to 4 hour program that I’ll share all that stuff with them and tell them who to contact so they know how to get the access to areas that may be blocked right now for them as a new person.”(USA005)

The above excerpt is from an American manager. It is not just important to encourage participating and understanding through network structures but it is also just as important to provide the understanding of what the benefits are of traveling and using the network and how it can get the organization closer to its ambitions. Part of this is creating a spirit (in the people) and an environment (in the structures) that facilitates involvement from day one. Many of the management in the US have identified that the relationships are key to getting work done and being successful. This is perhaps one of the reasons they make sure to get new hires started on building relationships from the start. From a cultural standpoint Americans tend not to have a problem approaching new contacts even those they have not met in person before. On the other hand, Americans can be perceived as over confident and perhaps too happy and this may cause skepticism from non-Americans; this could also hinder cooperation and the further development of the networks.

6.4 Creating Common Ground

The fourth theme, Creating Common Ground, is organized into the following four sub-themes presented below.

Figure 34- R&D US: Creating Common Ground - presentation of sub-themes & their underlying topics



6.4.1 Diversity of Perspective can Enhance Understanding

*"You always try to **cast yourself to the other**, whatever the other is- whether it is your competitor, whether it is your colleague in a different country, you know.... whether it is, "I am responsible for the globe or I am responsible for North America" you know, you try to put yourself in the other position and imagine what that is like...." (USA001)*

The above excerpt from an American manager is the ideal situation for evaluating situations in a multi-cultural context. By 'casting' yourself onto another you should be able to understand where they are coming from. It is this understanding that is the start of finding ways to create common ground. As the interviewee states, by putting yourself in the other's position you are better able to imagine what it is like for them as being them instead of understanding their situation being yourself.

6.4.2 Global Collaboration- *accepting change*

"But some of them are more difficult to win over than others. The ones that are open minded are more great to work with because even though they are skeptical they do see what is going on and they accept it and not unwillingly." (USA003)

The above excerpt from an American engineer is regarding creating and establishing network relationships in the absence of face-to-face communication with colleagues in Denmark. Moreover, it is about acknowledging the change in context for Grundfos from a Danish or European to a global or multi-national one.

6.4.3 Global Collaboration- *setting the standard*

"For example, when we were asked to be part of a design review; that was totally their idea and it made me feel great! That group is accepting us. You may have some valuable input, you are not just someone over there [in regards to the US] performing labor. You can think too. And they believe you! It is great, it strengthens the relationships." (USA003)

The above excerpt from an American engineer is great for a number of reasons. It shows how important it is for the building of network relationships to have **mutual collaboration**. It shows that it is in these relatively small and **simple interactions** that the concept of global collaboration is built.

Global collaboration is imagined or envisioned in the groups of management but built on the shoulders of every employee doing their daily tasks.

6.4.4 Global Collaboration- revelations for the journey ahead

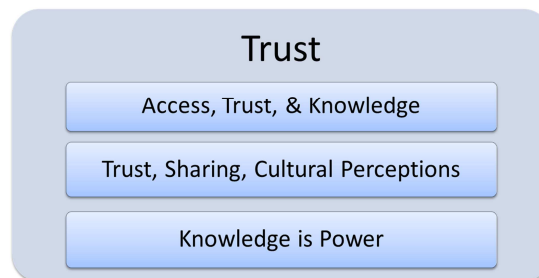
*“Good processes do not make up for poor relationships and good relationships can never make up for poor processes. But we need **both**...There are some things we can solve with process improvements and there are some things (that) we will never solve unless we get those relationships, which are grounded in **trust** and **respect** and a **spirit of collaboration**.”*
(USA001)

The above excerpt from an American engineer focuses on the dichotomy, the paradox that exists within organizations; the process or people issue. Of all issues confronting organizations successful communication and through that collaboration is one of the most difficult. However, people, groups, organizations and institutions need to and do communicate on a daily basis. It is not about removing conflict, the above excerpt clearly reveals that while we need good processes as well as good people, the process would be of little use if the relationships between people are not solid and sustainable. The more I dig, the more I begin to realize the emphasis on the internal aspects of individuals and the interaction of these phenomena, i.e., trust, respect and a “spirit” of collaboration...

6.5 Trust

The fifth theme, Trust, is organized into the following three sub-themes presented below.

Figure 35- R&D US: Trust - presentation of sub-themes & their underlying topics



6.5.1 Access, Trust & Knowledge

The following excerpt is from an American engineer recounting the story of how things have improved with regards to working together with R&D Denmark.

“I have been here [a couple of] years and when I started... I will say it in general terms (not naming person) Denmark would not listen, and no respect for things that were said and done over here. And in the two years I have seen a big change in that. But it is from the bottom up.

*For instance, when I started two years ago they would not call and ask me for my opinion. They just didn't care. They didn't know who I was, just didn't care. Now they are calling me and some other engineers to sit in on a [meeting], **which is amazing**.*

*But this is coming from project engineers more [from non-managerial] people. **I spent a year***

*over there working with them. I gained their **trust** and now they can see that **we** are capable over here.*

*We are sitting in on [meetings] and they are asking [for specific information in order to make an evaluated decisions]. Through some dialogue they can see the reason why we would [make a specific choice]. **They are listening.***

There has been a tremendous amount of progress but its starting from the ground up. People performing the tasks and some of them have wanted to do things differently but have not been able to because of managers.

*It is really starting now **this trust** that we can get things done.” (USA003)*

This excerpt illustrates a positive example of change happening—a relearning of how to work in a global context. There are two key aspects: 1) **gaining of trust through building of relationships that give credibility** because it shows one’s ability/knowledge and that also acts as a catalyst for sharing and innovating throughout the network(s) and 2) **developing an association to coworkers in other countries** also facilitates expanding the reach of your network through reputation.

It is important to point out the interviewee “spent **a year** over there working with them”. Not very many people have the opportunity to take a year and travel to another part of the world. While a long period of time is important for the building relationships it is not necessary, however, it definitely provides the opportunity for a multitude of interactions and a further defining of mutual orientations that help establish a relationship.

The engineer also states, “I gained their trust”. The interviewee also mentioned “they are listening” and “it was amazing” both in the context of successful results from positive exposure to being part of a collaborative process in network exchanges. These statements demonstrate the difference between being used in a network versus what this interviewee experiences as exciting and motivating experiences; this excerpt illustrates this with its concluding phrase; with focus on the promise of tomorrow with a focus on “trust” starting to take off. It could of some significance to take a step back and reflect upon why, for example, “they are listening”, it is indeed a very powerful statement. How do individuals perceive others listening? Perhaps it is because they understand others, how they communicate; how they share information and how others provide inputs (perhaps in a sincere way). It is also about chemistry? What makes for successful interactions such as these?

6.5.2 Trust, Sharing, Cultural Perceptions

*“The thing that impresses me the most is their knowledge. They have a tremendous level of knowledge based on their education and experience. And a lot of it is so practical. It’s not school book knowledge. They have a lot of practical knowledge that they gain from their experiences. And I am amazed at how they approach engineering. It is a very methodical way over there (Denmark). **When it comes right down to engineering they make some darn good engineers over there.** And Engineering is logical reasoning and they have the ability to do that. It’s just that they are not, from a cultural standpoint, you say they **are social and sharing, but they are not always willing to share** that information. Maybe it’s because they feel that they have worked hard to get there and they are **hesitant** to sharing the information. They do eventually. But like I said, **trusting.**” (USA003)*

The above excerpt from an American engineer reaffirms that continuous trend that has been revealed thus far—these individuals feel that **trust is necessary for sharing of knowledge and information and sharing is necessary for collaboration to occur**. Furthermore, culture dictates how our underlying assumptions are categorized in our minds that lead to how we perceive and interpret the given contextual environment and ultimately how we behave. This excerpt is important because the interviewee shows their ability to be impartial and show humility by acknowledging how taken back they are by the capabilities and knowledge in the employees in Denmark.

6.5.3 Knowledge is Power...

*“You can tell as you get up higher in these organizational structures there are some of these groups that aren't as willing to share information, knowledge, to get back to you in a timely manner. It almost seems like [they think], ‘we got the power here, we want to hold it here, we don't want to relinquish the power’ type of thing. Since they have never had to be global it almost seems harder for them to get in the mentality to be **global mindset** to really consider some of these other sister companies as peers.” (USA002)*

There are two sides to the above excerpt from an American engineer. One aspect is the contextual where the interviewee makes a correlation between knowledge and power. Moreover, they acknowledge that both power and knowledge are being denied. Furthermore, it is important to consider the feelings this situation conjures up in the US colleagues and its possible ramifications.

However, there is another side to this as well; a culturally colored perspective. It is particularly cultural in how the American engineer is rationalizing Danish employee behavior by constituting that the Danes must not be exposed to global context/situations much, otherwise they would have a better understanding and perhaps they would be more open (as indicated by the use of the term global mindset, which is indicative of a greater sense of awareness and adaptability).

What is a global mindset? Isn't Grundfos global? Do all Grundfos R&D employees that are in Bjerringbro deal with global issues? This data is related to the greater understanding of Grundfos and its ambitions for globality and it also relates more specifically to the data from Future R&D now where R&D Denmark (also known as “Bjerringbro 8850” under the Future R&D Now project) realized that it has a long way to go.

6.6 Global Ambitions

The sixth theme, Global Ambitions, is organized into the following four sub-themes presented below.

Figure 36- R&D US: Global Ambitions - presentation of sub-themes & their underlying topics



6.6.1 Organizational Change

“One of the big difference is, if you go to the organizational changes that we have made in... the group, and I mean, at cross regions and at headquarters- We really changed the organization and THAT had a profound impact on the perception on product management. In the sense that the change that occurred a couple of years ago, basically said that as product management, you are going to take a step back from... responsibility for market strategies and overall business planning and REALLY be more focused on your particular product, the technical aspects of that product AND...business around that product, but specifically business around that product and business around, “hey what are we going to do in this market place”. If you go back before that time, product management was linked into a segment structure.” (USA001)

The above excerpt from an American engineer, explains that organizational changes that have affected the speed and availability of information. For example, prior to the change segment managers were in a position to communicate information back to Denmark but now a product focus spreads out the responsibility causing for information also be more dispersed. There is also an adjustment period for any type of major organizational change that should be considered.

6.6.2 Finding & Sustaining a Balance

“At the end of the day, coming up with the right widget is easy compared to trying to solve the kinds of problems that we are discussing here- the challenges, right, because they are really fundamental challenges and unless we come up with... I mean it starts within my mind, it really starts with... basic attitudes, dispositions... I mean you have got to have the right people in the leadership of the organization. I am talking the global network. We need to have people in these positions, who are seeking continually to build consensus, to find ways to collaborate.

*[That] look for **mutually rewarding targets and objectives** and so on and the counter to that is, we have to try to minimize cultures of, “well, you know, let me see, what is good for GPU” “Yeah, you know this is going to be tough on Peerless but [who cares about] those guys. We are going to do whatever we need to get GPU”. I have seen, you know, when any of us are at our worst, we can make very narrow-minded decisions that benefit our local entity? You know, whether if that is, “Hey! What can I do for product technology team?” ” Yeah, it is not really good for GPU” ”what is good; what can I do for [myself]?””“Oh, that is not really*

*good for GPU...” you know. We all fight that every day, to find that balance because you are looking for a way... we all want to advance our career, that of our department, that of our company, that of our global organization, and the question is, **how do we put that into perspective?**” (USA001)*

The following excerpt from an American engineer discusses how creating common ground is about finding a balance between personal initiatives, those of the various stakeholder groups within the organization and the organization's overall agenda. What the interviewee reflects upon above is more on internal human traits for interacting with others and decision-making processes. It is an individual's underlying assumptions, perceptions, interpretation and the resulting behavior in any given context that they reflect to be of importance. However, how do we consider this in an organizational context? In a network context? This reminds me of the “what's in it for me?” saying observed in R&D Denmark.

6.6.3 Access to Information

“Right now there are two big things I struggle with: access to documents and access to information. I have a software guy on my team, he was trying to work on a project and he got completely locked out of access to any software stuff. Because they were trying to figure out if he should have access to these things. For security [reasons]... (perhaps), whatever,. You know because now it's out of Denmark. So we don't have control over what he does with this information.” (USA002)

The above excerpt and the excerpt below from the same American engineer focus on presenting the problem of access to information and the hope of process improvement that will facilitate the smoother. How does Denmark expect to achieve its goals of global collaboration if it has not defined parameters of trust for sharing of basic information that is part of an individual's job description.

6.6.4 High Hopes for Process Improvements

“We all have realized there are problems with working on parallel activities and there are some strides being made to improve global collaboration. One of the things in line with this that is big for the DE group is the XPI. XPI is a process improvement team. X is because there are separate ones.

P stands for process and I stands for improvement. Then there is MPI and HPI and SPI. Mechanical, Hardware and Software; each of these technical groups has their process improvement areas.

I think with this it's actually going to help out a lot because of the same things we were just talking about. Hey send me over your calculations, design journal on this particular thing. You can't just say we don't have one. We just go over and talk to this guys for how to do it. Well that's great for you but now I only have this drawing and I don't know how you came up with knowing this is the right way of doing this.

But now with these Process Improvements there are a lot of things on configuration management, detailing how we are going to store documents, how others can have access to them. Who has access to them...” (USA002)

As expressed in the previous excerpt this American engineer has been struggling with two major factors impeding the effectiveness of their global collaboration, “right now there are two big things I struggle with: access to documents and access to information.” (USA002) The above

excerpt identifies the interviewee's hopes on the process improvement team and the development of improved collaboration.

6.7 Global Collaboration

I start this theme with an excerpt from an American engineer. This excerpt is specific to the aims and desires of management; both employees and management want the same things, e.g., smooth processes, access to information, access to people, etc.

*"I want to build a competency in a certain area and be specialized in that and whatever else we need we get from Denmark or China or whoever else we have to. That is what I want to do. That is how we share our knowledge. I don't want to **reinvent the wheel**."* (USA003)

Theme seven, Global Collaboration, is organized under three sub-themes presented below.

Figure 37- R&D US: Global Collaboration - presentation of sub-themes & their underlying topics



6.7.1 Current Status & Challenges

Reasons for current state of collaboration

*"I think that **trust** issue is a big thing. I still think that some of the management thinks that they know what is best for us and that is what's stopping us. At the same time we are trying to **improve our competencies** to the point where **we can win their trust**. And I think that we don't have enough competencies to be innovative. But this is where this global collaboration comes into play. We may not have this competency yet but we are getting there. But we want to use HQ competencies, knowledge to help us with our innovation over here" ... "Why should we help you for North America and **loose our job**", etc... is going back to a lot of that. That is why I think a lot of the intent is there but it is not happening yet."* (USA003)

The above excerpt from an American engineer focuses on explaining the current challenges they believe are the greatest for the success of global collaboration. When there is a lack of understanding individuals use previous experiences to make sense of their environment. In the excerpt above the interviewee is going through a process of self-assessment and is truly attempting to understand the reasons why the current state of collaboration is the way it is. They consider two possible reasons as to why Danes are not receptive to them. On the one side they internalize the problem and consider that they do not have the competency level adequate enough to innovate to participate at the level of the employees in Denmark. On the other side they try to understand that perhaps by helping them, the Danes could lose their competitive edge and risk losing their jobs to American colleagues. Again trust comes up in the process of improving collaboration. The interviewee infers that if they were competent enough that they could be trusted. Underdeveloped relationships and a lack of creating mutual points of interest create a gap in trust.

Challenges and working towards future success

*“Our organization has challenges, the communication, the willingness to collaborate and build consensus and so on [however] my perspective is that we are a lot farther down that track and some of that really is because, even though it has not always been effective over the years, we have people that have known each other for a long time. So there is **SOME individual levels of relationship, trust and accountability and all those things... I mean, what is the substitute for that.**” (USA001)*

The above excerpt from an American engineer reveals how long-term and/or strong relationships manage to maintain and sustain working networks. Here again the content circulates around what are now common themes, such as in order to work on improving collaboration we need to work on relationships, trust and accountability, for instance.

The good stories, current solutions

*“A really good example of utilizing that global network for assistance... As I was the only (specific type omitted) engineer for our whole department, for the first couple of years. ...**and with those connections**, we have been able to ask the **right questions** to the **right people** and **having the right focus** and similarity of purpose; we actually were able to hire a resource out of our Danish office. So the person that I have a dotted line to provided us one of their person for 50% of their time for about 9 months and also, I think they have been/lived in Kansas before.” (USA005)*

The above excerpt from an American engineer tells a great story of the importance of ‘those connections’, those network relationships were able to facilitate getting a position filled with the minimal search and investment. However, there are a few specifics of how the interviewee made these comments that are important to consider. They mentioned three: (1) the right questions to (2) the right people and (3) the right focus.

6.7.2 Individuals in Interaction

Face-2-face creates incentives for collaboration

“That was good and then almost immediately I was indoctrinated into how Grundfos does things. We took a group of our team over to Denmark and had a bunch of meetings with our cohorts over there. That was about three months after I started. And shortly after that a group of people came over from Denmark. Kind of push the creativity/innovation side of things; a kind of innovation camp... So all that stuff was kind of eye opening from where I was sitting and this is really a focus. And innovate is really a top priority and not just reporting to the stockholders and the bottom line profit and that sort of stuff.” (USA004)

The above excerpt from an American engineer discusses their shift from their previous employer to Grundfos. They discuss how it was good to have the opportunity to work on product development and work for a fresh thinking company. The ideas captured above are ones of creating understanding, sharing experiences through project work, of bridging gaps caused by distance whether physical or cultural. It is about ideas of sharing the Grundfos vision in a palpable sense, as emphasized by the interviewee when they reflect how, innovation, “is really a top priority”.

Face to face- out of sight, out of mind

“When you are there working with them personally they look at you and they listen. ...the

*distance, talking on the phone or email, is whole lot different than sitting in front of them and having a discussion. They seemed very intent. **The engineers would listen as if they were learning something from you. And that was good. I really enjoyed that.** Because sometimes when I was over there I felt overwhelmed, "wow, these people are smart." Everyone knows exactly what they are doing, they are very structured and they are very good at what they do. But they were friendly; they were not demeaning in a face to face thing. And they are not really demeaning now. **They just don't want to listen when you are on the phone or email.** When you are face to face they are very receptive, very friendly." (USA003)*

The above excerpt from an American engineer focuses on reflecting upon the relationships face-to-face contra virtual. The significance of having opportunities for face to face communications has already been established. It is not a new phenomenon. However, as the old adage states, 'out of sight, out of mind', truly epitomizes the issues discussed in the above excerpt. It is unfortunate that while the interviewee had a positive experience in person with colleagues in Denmark, it did not continue once they were back in their local office. I attribute this as a result of the interviewee needing to make more associations for those they need to connect with. They have not made enough of an impact, in other words the colleagues in Denmark do not see the relevancy and are not being influenced while communicating virtually.

Global collaboration- relational vs. physical proximity

*"...in China.... recently, I pursued the [not specifying the type] manager for China, because we were trying to launch a new product for later this year with a very truncated timeline and the supplier choice that we have made is in that region. So I went to my contact to find out if we could, somehow, use and collaborate with their resources that have already had contacts with this supplier in order to figure out how we do business with them...As it turns out, even though they would've probably been willing to help me if they had more resources, there was also a global department that was really even closer to that supplier. So, our team ended up going with this other group. **If all [Grundfos] is on the same page, understand the priorities, understand the direction and not only do we have individual regions that have directions but those regions have directions that all point roughly in the right direction globally.**" (USA005)*

The above excerpt from an American engineer recounts a story about global collaboration. When we think of relations we tend to think that proximity is analogous with closeness. However, in a network construct it may not be the case at all. Physical presence does not dictate how relevant, important or valuable a relationship can be. I believe this is because usually we think of relations on a personal level and the case of proximity does then play a key role in closeness. Usually those around you physically such as your family, friends and colleagues tend to have the greatest significance to influence and interact with you. However, when we explore the concept of relations on a greater, more abstract scale we can see as this example clarifies the above distinction. The interviewee contacts his colleagues in China thinking that since they were closest physically to the contact they would be the best to lend assistance in connecting and smoothing out the relationship. However, it was someone in the global department that had a closer connection with this supplier even though they are physically located in Denmark. I mentioned colleagues as part of the three groups that would normally be part of our private social network. Interestingly enough, we tend to consider and allow some colleagues to permeate our social networks and by doing so allow the physical proximity be analogous with our level of closeness with them. This in turn can explain why employees want to

have the opportunity of creating these bonds. However, we should consider the following: Is it realistic to expect employees in a global context to create opportunities for colleagues from around the world to permeate their relational proximity networks?

6.7.3 Understanding the Global Priority

Market context

“[For example,] what is best for the North American market would be to have that product as soon as we possibly can in this market. We got a void there, and there is a threat associated with that but the other side of that is, we have no way near the market opportunity for that particular pump. That is one pump, where we do not have the same market opportunity in North America as what exists in Europe. And we have a HUGE market share today in Europe and to lose that position, by not putting the right level of focus and getting this project delivered on time to the European market.” (USA001)

The above excerpt from an American engineer is an example of understanding what is best for the global market. The issue here is that the European market is not necessarily the global market. So we go back to a regional understanding of the context. How do we develop a global contextual understanding?

Network context

The following two excerpts are examples of good collaboration.

*“So we spent the whole day talking about the market, talking about the strategies, talking about globalizing, our push and our focus in our game plan and they also talked about what I mentioned a minute ago, which is the ability of the sales side to close the loop, come back around with: “ okay this is what I asked for. This is what you gave me. This is what the market is looking for or not and this is how we cycle it back around.” So they were already thinking all that. So I was very pleased to see how things unfolded at that meeting. **I think this is the most teamwork I have ever seen now and also the least amount of hesitance and standoffishness with those high level people. It really seemed like there’s good collaboration going on.**” (USA005)*

“How do we put that into perspective? I have always tried to build it and say, [if] we could all think,

“Is this a good decision for Grundfos at a group level?” “does it support the group’s visions and strategy over all?” and “what does it do for other regional level? What does it do at a local company level? and department level? What about me?”

If we can try to put those in harmony rather than having them at odds; in conflict...and it is natural that there IS going to be conflict.” (USA001)

In a Grundfos context we are talking about knowledge talent/workers. These employees tend to have an extensive knowledge base, usually they come to Grundfos with a high caliber education and/or work experience. Most engineers want to create and/or advance technology and our highly passionate people. You can identify the excitement in the interviewee’s voice in the highlighted sentences in the first excerpt above. The second excerpt really tests the Grundfos phenomena of “what’s in it for me?” and turns it on its head.

Transparency of Decision-making

*“When the global priorities then dictate that we cannot get that product as soon as we maybe thought... Then we also need to understand why do they make that decision, **Help me understand.**”*

... “oh. Okay. It is because there is this European thing that is coming on. We are selling X millions of these circulators in Europe as compared to a much smaller number in North America. For the good of the overall organization, we have got to focus on our limited resources on making sure we hit this deadline in Europe which means that we are going to have to postpone that out”.

*We have to then be able to take that global prioritization message back to this audience and not just say: “... we cannot, nobody cares about what we need here”. Because that also **destroys the relationship side and you lose credibility through the whole communication chain.**” (USA001)*

The above excerpt from an American engineer illustrates what they believe is missing for improving communication at a global scale.

trying to achieve is that if Grundfos R&D in Denmark makes decisions about which product in what markets to prioritize without involving (in the least for awareness) other global units such as the US unit it will be difficult to achieve a feeling of togetherness, of a global network that collaborates despite cultural and national boundaries. At the end of the day, for this interviewee, it is not about culture and where we are geographically located that matters, it is not just talking about working together but actually working together. When you ‘find out’ about things that you believe you should have participated in deciding or should of at least been aware of the situation thus being given the opportunity to provide inputs before decisions are made it may be difficult to trust and value relationships.

Especially if you explore the excerpts just discussed above under the theme of understanding global priority, this issue of transparency resonates equivocally. It is about being present in the moment and actually communicating whilst in the midst of the decision making that seems to be needed for the collaboration to improve. As the above interviewee indicates quite clearly it is in not communicating while in the process that “destroys the relationship side” and this creates loss of “credibility”.

Organizational arrogance vs. confidence

“I look at it that way and that also is the difference, in my mind, between confidence and arrogance. When we had this meeting the other day, one of the things that I have said that if we want to be more global, I said: “we have to learn to replace organizational arrogance....” and I mean it from any other direction....”... with organizational confidence.” so.. you know.. While we, here in [specific team name removed] team and GPU, think we know the best way to do everything, we need to replace that with a confidence that says, “ we know some stuff. We know some things about this market. We know some stuff about our product and by the way, we are willing to collaborate and learn that we do not see the whole picture clearly.” (USA001)

The discussion above from an American engineer was focused on an interesting concept, that of organizational arrogance vs. organizational confidence. In this interviewee's perspective confidence here signifies an understanding of knowledge that we possess but not that we possess all the knowledge in our organization. It signifies openness. While organizational arrogance signifies being closed or in other words being limited to only your categorical base assumptions; believing them to be right to a fault where they blind you to other interpretations that could create fresh and inspiring ways of thinking, for example.

6.8 Summary of R&D Unit: Practical Considerations

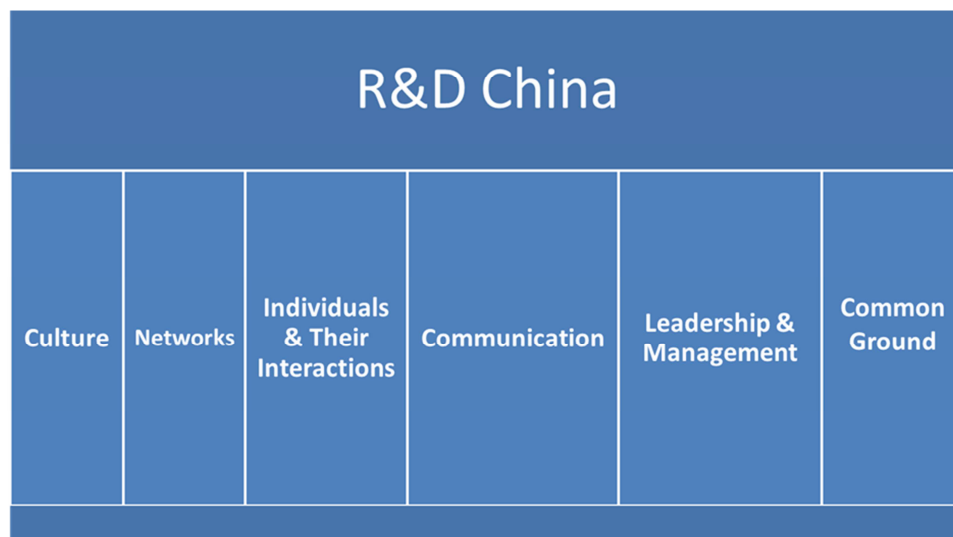
The R&D unit in the US is a physically small annex to the US sales office and headquarters. Many of the engineers they use are dispersed throughout the US. R&D US deals with constantly redefining their role/priorities, whether they are regional or global and how to be included in that global network. As the data presented this are several reasons:

- 1) Transparency of global prioritization
- 2) Access to information and documents
- 3) Difficulty building relationships with foreign colleagues
- 4) Cultural differences, e.g. perception and understanding of concepts
- 5) Lack of solidarity with Danish colleagues (skepticism)
- 6) Cultivating long-distance relationships- out of sight, out of mind phenomenon
- 7) Developing trust

7 Grundfos R&D China- Identified Themes

As indicated in the Case Presentation in Chapter 4, Grundfos has been going through a time of great change in order to prepare itself to meet the challenges as well as their ambitions for the future. The Presentation of R&D China also described the ambitions to make China Grundfos' 2nd home market. Lastly, the ambitions of Grundfos to make R&D a global network where everyone would be working as if they were sitting under the same roof also play a role in revealing emergent themes. Given the context described in Chapter 4 and both Grundfos' current situation as well as its future ambitions the following six themes emerged from the data for R&D China. These themes arise given the context of the study, the research questions guiding the study, Grundfos' situation as explained above.

Figure 38- Six Primary Identified Themes for R&D China

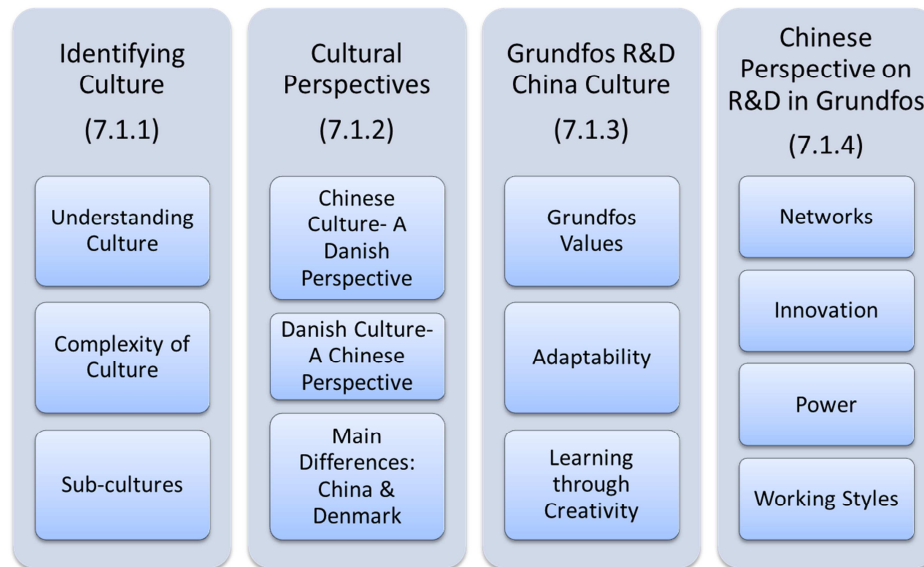


R&D China is a large unit to explore and thus there is a considerable amount of data that is covered here. In order to present it most clearly I will start each theme by presenting a figure representative of the underlying themes.

7.1 Culture

The first theme uncovered is culture. Given the perceived differences in culture between Chinese and Danes, culture was a very frequent topic of discussion. The data under the culture theme presented several underlying themes. In order to make it more clear the following figure presents the underlying sub-themes:

Figure 39- R&D China: Culture theme - presentation of sub-themes & their underlying topics



These will now be presented in more detail below along with representative excerpts from the data.

7.1.1 Identifying Culture

7.1.1.1 *Understanding Culture*

The following sub-theme is organized into three underlying aspects: 1) what is culture, 2) we all want to have a good life and 3) the individual in culture.

What is culture?

The following eight excerpts from both Danish expats as well as Chinese employees/engineers presents and summarizes the overall thoughts about what culture is for the employees that were interviewed at R&D China (should there a question, the context of the dialogue for each of these excerpts was culture).

*“When I think about culture, it is all those things we don't need to tell each other. It is the things that are given. It's the way we **perceive** ourselves in context of others, so I think that, for me that is the culture-how I define myself or the group I am in, how we define us as a group, how to say, by not being the others. I think that captures the culture and to do that you need to have a lot of things you agree on or at least you have the same habits or same definitions of things, so a lot of things you don't need to say.” (C023) (Danish expat)*

*“This is something you cannot see but it really impacts a lot the way **people thinking** and also **people work with each other**.” (C001) (Chinese employee)*

*“You cannot create a culture very soon. It is **evolving**.” (C012)(Chinese engineer)*

*"I think that **culture is where you come from and what kind of environment you were brought up in**. That is your own culture. And each person has their own culture if you could say that. We all, in Denmark we may (most of us) celebrate Christmas but we may not celebrate it the same way. We may not eat the same food but we have a Christmas tree most of us anyway. But I mean I think it's the same, to me there's no difference from Chinese and Danish..." (C027)(Danish expat)*

For the participants in R&D China culture also has to do with the ability to understand one another:

*"I think culture is something like the way people do things and think. First is the way the people think and the way people behave. **So, if you don't know the way other people think and behave, how can you work with them smoothly?** Because you cannot predict what's the next result, if you say something to those people." (C015) (Chinese engineer)*

A Chinese engineer added that the, *"... the environment challenges your characteristics."* (C006) (Chinese engineer)

Therefore, it can be said that one must adapt in order to participate. Moreover, a Danish Manager reflects on the difficulty of communicating with individuals that are part of the same culture.

*"**Communication is definitely one part of [culture] and communication is not easy. And even speaking with people [in Denmark] it is not easy to understand and to be understood.**" (C029) (Danish expat)*

When understanding culture, another participant added that it is a combination of the values or characteristics we bring to the table as individuals as well as what our expectations are for others, for example, *"... there are several things you can discuss. There are the **values** that people actually [consider most significant]..."* and *"... Our **expectations** are totally different..."* (C029) (Danish expat)

The excerpts above have explored culture as something that appears to be many things simultaneously; it is self-evident, it is perceived; it is something we acquire from our environment(s).

We all want to have a good life

The following two excerpts illustrate commonalities shared as human beings.

"I think that's the main difference I see because a lot of the other values we have and operate within Denmark and in Grundfos: [for example,] we want to have a better life. We want safety, everything; all the basic stuff. [This] is also... Chinese [want to] have these kinds of [things]...." (C023) (Danish expat)

"I would say, other points may be different, but the working spirit is similar." (C011) (Chinese engineer)

The Individual in Culture

The following excerpt is from a Danish expat where they contemplate the importance of the individual's mindset.

“Even in chaotic or confusing cross-cultural situations, they are not as chaotic if you let yourself be in this environment and accept what's happening around you. But if you bring in like my Danish mindset to that environment then I get stressed out.”

“So maybe the [focus] is more inside [of you], I'm doing this task. It's okay but if I'm Danish, I would think that maybe the purpose of society would fail if I go there and everything is so chaotic because why is it not more well-structured. Why is the supermarket so crowded? Why is the assistant at the desk so slow and why is it so loud? Everything is just annoying.”

“I think it is context related you know. You can't bring a Danish context or Danish mindset into a Chinese context because it does not make sense. Of course it does not make sense because you are not in Denmark”

“I think the challenge we have is to separate somehow [we think] and maybe to be more target driven. Because I think if you have clear targets then you can find a better local base for getting there and you can focus better.” (C023)

7.1.1.2 The Complexity of Culture...

The second sub-theme of identifying culture for R&D China explores the following three underlying aspects: 1) cultural training- novel but not useful, 2) culture trainer shares as story and 3) culture is a human issue.

Oversimplification of culture in the literature predicate business since the concept of culture is abstract it can be seen as trivial in context and not pertinent to what is seen as ‘real business’. This understanding of not wasting time on understanding culture can be seen in the data, *“Although we have different culture, it is just like your face is different, your tongue [language] is different but it doesn't matter for how we work together in product development. So, whatever isn't clear we just need to make good coffee, make a good cup, whether you're from Denmark, or from China or from America.” (C015).*

The above excerpt reinforces the lack of applicability culture provides knowledge workers in the field. By using an overly simplified example the interviewee indicates the need to focus on task (the making of coffee). I found that this is primarily because while culture seems to be an important aspect in organizations there is no real, clear understanding of it or its usage. Therefore, I believe we should consider culture; how organizations choose to understand, interpret and use the concept of culture in their organizations, there inlays one of the issues.

Cultural Training-novel but not useful

The following excerpt from a Chinese engineer presents that real-world issue with cultural training—it is informative for some general guidelines but not useful in a dynamic, practically applicable way. R&D employees have to work on two levels: the internal intellectual capacity and the social interactive one.

“I think, actually two years ago, we had a culture training. It is telling the Danish culture, which is quite different from ours. If I talk to the new employee, I would like to use a lot of examples to show them because if you say just in words like guidelines or something, it is not easy to understand and I think it's better if we use examples, even to specify some situations which are quite different. I think it helps; helps a lot.” (C014)

R&D China received culture training to facilitate how to work across cultures, help employees be better prepared to understand and communicate with their foreign colleagues. However, the result was quite revealing; cultural training is over simplified. The above excerpt places focus on how static cultural training is especially for those working in a dynamic environment such as multi-national knowledge networks. The above excerpt illustrates how this participant identified how to facilitate understanding of the differences for new Chinese employees—through specific situational examples. Moreover, there can be a situation such as the following excerpt, where the information being presented at such training is trait and non-essential for the work of engineers and this can have a detrimental effect on how culture in organizations is perceived.

Culture Trainer Shares a Story- “the times are changing”

A story within a story- One of the Chinese employees shared a story about conducting cultural training in China that the cultural trainer shared with them, it follows below:

“In the training there is around 30 people, Chinese people to join. These guys can speak better English than him, and more money than him, so... when he introduced the Chinese culture to these guys, they totally disagree. So I thought he feel that the, that China become more and more international already.” (C008) This is yet additional evidence that while the information provided in cultural training could be novel and particularly interesting in some regard, it is outdated and not what employees need today. Overall, there is a general need for knowledge workers to understand more complex environment underlying culture as described by the following excerpt.

Culture is a Human Issue

Another Chinese engineer expresses their need to have more knowledge about how to deal with cross/cultural issue; in reality what they seem to be searching for are “inter- and intra- personal tools”. In the following excerpt they acknowledge what they have learnt for example, about cultural directness, however, how they desires more!

*“That is a trend. The bigger trend maybe Danish are more direct than the Hungary or China, whereas [Hungary and China are] more indirect. **But now I'm more interested on the micro level.** Maybe due to different, due to some particular cases, how we show that and I'm trying to look at those examples from my colleagues around me. Try to catch all differences because I have attended several workshops talking about culture difference but it's up here (emphasis on categories). Okay, Denmark, in Denmark some female smoking, in China, okay, it's not good. **Those kind of things is interesting to know but how to get deeper, how to get it... I mean after knowing this, how can we use that benefit our work.** Yeah, those things we cannot get from the facilitator, from the professor, who are studying these kind of things, yeah.” (C012)*

7.1.1.3 Sub-Cultures

The last underlying sub-theme in the main theme of culture for R&D China is the evidence of sub-cultures. The following excerpt addresses the layers of varying cultures, each one originating in a grouping of project teams, departments, organizations and overall, the distinction between China and Denmark. Overall, they acknowledge that while there are varying cultures existing in Grundfos China, there is a demand from Grundfos Group to conduct business in a particular manner.

"Each project team in the office have their own culture mainly given by the project manager and then R&D in this office have one culture, R&D and the other part of the office have another way to approach and to do things then GPC at this location have one way, the Wuxi location, the Shanghai location have a different way but still Grundfos. China is one box compared to Denmark. So.. and then maybe you can say Grundfos have a cross country culture and then of course you can have the question, do we or do we just have one company and then we have every country's own culture- way to do things and then a lot of push from Denmark." (C023)

7.1.2 Cultural Perspectives

The following underlying sub-theme has been organized into three sections: 1) how Danes see the Chinese culture, 2) how Chinese see the Danish culture and 3) the main differences the cause misunderstandings.

7.1.2.1 Chinese Culture- A Danish Perspective

The following excerpts are presented from the perspective of the individuals interviewed; in this case all excerpts in this section are made by Danish employees in China.

A land of Paradox- traditional, modern, collective, individualistic

Your perspective determines how and what you understand. The following excerpt explores China as a paradox.

"China is the biggest paradox. Everything; the way they do, live and talk. Everything is a paradox, because you have both extremes. They have their own natural culture and do in their natural Chinese way and then they can come here in Grundfos and step in (the talents) and cope in a totally different culture and perform in it." (C029)

I believe Danish employees have focused on the dichotomy because they are out of their element. Secondly, by comparison the sheer size of China versus Denmark can be overwhelming. Thus, attempting to make sense of the Chinese environment using primarily Danish environmental cues will likely result in confusion. Given that the Danes are foreigners in China perhaps all the extremes are more emphasized for them and thus they become overly-sensitive to the nuances. Perhaps, it would be interesting to ponder that the same can be said about Denmark... a land of paradox-traditional, modern, collective and individualistic. The same can be said about Danes; while they are at work they are one way, and while at home another, and when out with friends, yet another way.

However, another participant does point to the changing times and the Westernization that is happening in China, when they state, *"But now, China is becoming more and more international."* (C008) Indeed there are changes happening that are increasing the modernization of China and thus affecting the Chinese people. For example, as the excerpt above points out Chinese employees need to be able to step into the multi-national organizational context and understand how to interact in this setting, seemingly switching off what is perceived as more Chinese cultural manifestations over to more Western ones.

Socially Collective yet Individual Performers

"Think about the Olympic games that were held here in Beijing. A lot of Chinese won gold medals. But if you look at whether it was a team sport or an individual sport, what do you think it is in China? Individual. It tells so much about China and its culture." (C028)

Even though the Chinese culture focuses on the collective and on creating harmony, when you look at the individual Chinese person they are very individualistic. Chinese are taught to perform on their own throughout their education. There is a significant connection between needing to perform individually, the sheer size of the country and the ability to succeed in the future (This point also comes up later on when I discuss emergent sub-themes under the individual and their interactions). China is also in a process of transition and explosive growth. Until the time comes when the country's growth begins to level off there will be a cut-throat type of competitive nature and this, I believe is where, this need to perform individually stems from.

Guan Xi- a Danish Perspective

The next excerpt deals with a Danes interpretation of Chinese culture and Guan Xi.

*"Yeah, I think, this manager, he expressed it in very simple way: that everyone in the street, they could not care less about all the people around them. They do not see you, that's why they can walk straight into you in the supermarket without noticing you. It's just because they don't care about you, **but the close relations they have in the family or friends, that's everything.** So they would be willing to make a criminal action to cover for something or they would do anything for the people close to.....so they are everything and that goes all directions in the family or in the group.*

When people talk about Guan Xi, it's well, we have that in west of Denmark also you know, you borrow my trailer (LAUGHS) you know. I know a guy with cheap wood and you can get for your fireplace or something but it is not to the same extent. This is very extreme. It is not just inside the frame of the law. I think the possibilities in this frame if you have this relationship to someone then it is something with high value. It's really extreme." (C023)

There are several aspects of the above excerpt that need to be taken into consideration.

- **Size Matters!** Again I have to come back to the sheer size of China, when you go to the grocery store, it could be likened to big festivals in Denmark. It is important to have some perspective to the size of the crowds that are being compared. When you go shopping in Denmark, perhaps if you go shopping the day before Christmas will you encounter something close to the same size.
- **Family and friends are everything!** Another aspect from the first part of the excerpt is the need to get rid of the excess as in only focusing on the close relations we have in our families and our friends. We do this all the time in how we infer cues/signals from our environment; we get rid of the seemingly non-essential and key what we believe to be important.

The second part of the excerpt focuses on the comparison of Guan Xi to how Danes help each other by doing favors for one another. While it is true that we all have networks that we rely on, the participant suggests that Guan Xi networks are extreme in the sense that individuals are willing to take whatever actions necessary to help one another out. I would have to point out I believe this is primarily dependent on the relationship and the specific context at hand and not as specific to a given culture.

Lastly, I would also point out here that I also consider the West's fascination with Guan Xi to be anticlimactic and more a case of linguistic shell-shock. We as Westerners identify a word, such as Guan Xi, in another language, presumably more exotic languages than Germanic based ones and are mesmerized that one word could define and describe what usually takes us many. In Chinese there is also a character that means 'to listen with your whole being'. You cannot truly translate that meaning. This bears in mind the significance of language and meaning creation and thus, how we communicate and understand one another.

7.1.2.2 The Danish Culture- a Chinese Perspective

Based on the data collected in China the general opinion of the Danish Culture in Grundfos is characterized by the following attributes (these are followed by excerpts that substantiate the points):

- Very direct
- Likes to talk and discuss (meetings)
- Flexible
- Values relationships

Engage in Consensus Seeking Activities

Perhaps the most common statement in the interviews I conducted is that Danes, especially in Grundfos, are direct and like to talk and discuss a lot. The following three excerpts from different interviews with Chinese employees, gives us some examples:

"...a lot of discussion and a lot of time to think about it." (C009)

"I can feel in general, Danish people, they are more simple and direct. And more open and openly to talk about something and sounds like, and more confident to talk about a lot of things openly" (C001)

"I feel the Danish character especially in Grundfos is more about agreement and more involvement. So, more people discuss a long time, they make decision." (C021)

Individual Drive but for the Overall Good

Another key aspect of the Danes observed by the Chinese employees is that while Danes enjoy talking and discussion, they are also individually driven and are highly ambitious, however, with a streak of rebellion. The following two excerpts are a fantastic example of the situation in R&D China with regards to the understanding of the Danish cultural influence.

"I think the main difference is that in Denmark you cannot set a lot rules that people will follow. Everyone wants to be themselves and define the rules by themselves, but everyone have some kind of reference integrity or reference to what is okay and not okay and what is the right thing of course and defined by maybe by Danish culture. The individual quality output is quite high because everyone is self-evaluating a lot. So it is very individually driven or small groups or something, so a little bit revolutionary."(C023)

*“Recently I just figure out that those Danish people they have some **internal drive**. Although you cannot see from the surface...but they do have some internal drive, they are doing that.” (C016)*

Using Discretion & Taking Decisions Quicker

While the above has been quite positive perceptions of the Danish culture there is indeed one thing in particular that the Chinese employees have a difficult time getting used to and that is the directness. This is something to keep in mind when Danes are interacting with Chinese employees, as the following Chinese employee states, *“I don’t know the Danish culture very well, but I think they are very **direct**, very direct. If they have something like a different opinion, they can tell you directly **even in public**.” (C025)* I get a sense from this individual that this may be difficult to deal with as difficult to understand why this is the way Danes behave. It may be a relatively easy way to improve communications between Chinese and Danish employees by addressing why Grundfos chooses to have direct type of communication.

And lastly, I identified in the following excerpt that perhaps there is may also be an issue with the process of making decisions (this is also brought up under the Networks theme).

*“I think the [Danish] people **respect individualism**, they **respect diversity** of the different people in the groups, and also the **very democratic** and also trying to bring other people have the same you know concerns **people consensus**. But at the same time **I think there are something we can improve from this Danish culture in especially in China that's how to [quicken] the process for making decision**. And also... adapt to the different way of thinking especially in China. (C020)*

7.1.2.3 Main Differences between China and Denmark

Through much reflection I realized that there are two prime differences between Danish and Chinese Culture in the business of Grundfos R&D is:

- Communication/ Working Style
- Education and Experience

Communication

The following excerpt is from an interviewee explaining the differences between Chinese and Danish employees. According to the following excerpt from a Chinese employee, not being confrontational is a way of showing respect. Not being direct is a way of showing humility. Especially if a Chinese employee perceives you to be superior to them they will find it quite difficult to be direct and tell you how they really feel.

*“But in general, I think, Chinese are, are little more humble...a little more conservative.....not that open to talk about what they like or dislike and **that they feel that's respect**. I think, that's the difference compared both American or Western. So sometimes, in Danish or Western culture, you can easily get whether the people feels they support you or not, they like the idea or not. That's more easy.....for Western people you can get.*

*But for Chinese people, it's not that easy because they don't tell you the truth sometimes that people can, maybe thinking it's hard, why they don't tell you the truth. ...I think the people, in Denmark, in Western they will feel why these people, they are just not telling the truth and they are also play around, something like that. **I think they are not intentionally to tell the***

truth sometimes it's just not easy for them to say, "I don't like you," or "I don't agree you," especially if you are the boss." (C001)

You Lead, We'll Follow vs. Let's Collaborate; I lead, you Show me the Way

Another good example to reinforce this difference in communication is from a Chinese employee that assists Danish managers with understanding Chinese employees, "for example, the Danish leader, when they work here I will usually give them those kind of orientation because sometimes, they cannot understand why Chinese employees said okay but they don't follow so well...

Danish Managers said, "They never talk," but, "Yes, because you are the boss and they think you are to make the decision and they don't need to talk." (C001)

Expectations are different, behaviors for interaction are different. We perceive each other with our own identifying cues, it is a real mess. That is why I titled this section how I have—in a nutshell I can identify two general perceptions with regards to the miscommunications between Danish managers and Chinese employees: Chinese employees think: You lead and we follow. While Danish managers think: Let's work together: I lead, but you need to show me the way.

Danish managers are expecting Chinese employees to be Danish, but they are not. The context has not been fully identified and made explicit for Chinese employees but still they are expected to play by the rules. How can they? No one has told them what the rules are! Just when playing a sports game, to be the best at it you need to understand the rules and practice. The Chinese employees may understand to some extent the international organization context but they may not fully understand the rules that are to be followed while in this "game" nor have they had time to practice. My point is that Grundfos in R&D China but I believe overall in establishing R&D Global Network need to make explicit what the rules of the game are and provide the tools for establishing these core inter- and intra-personal competencies so that everyone can play the game to the best of their abilities. No matter what advances in technology are introduced or how much cultural training is provided as long as these two groups of people perceive each other and their communications through their own set of cues, there will always be miscommunication.

Inferiority Complex vs. Egalitarian Openness

There are two aspects to this section: 1) job structure in China vs. Denmark and 2) new graduates. Firstly, there is not very much distance between Danish managers and their employees, however, this is not the case in China, there is traditionally a distinct distance between managers and employees. This causes a figurative rift between managers and employees in China. Secondly, when you add the novelty of new graduates as Chinese employees to the mix, what develops is an inferiority complex. This of course, makes communication much more difficult if not impossible. I pointed to the issue of Danish employees being perceived as superior and this perception blocking Chinese employees from allowing them to be direct and open in their communications. The following excerpt points out, sometimes Chinese employees end up treating Danish employees (expats) as their boss instead of a colleague.

"I can take an example like I know that in Denmark actually, all the managers and engineers, they are in quite equal level and they could talk to each other and actually it's only a career choice but in China, it's not. The manager level actually is one level higher than the normal

employees. So when we talk to even the managers in Denmark and colleagues in Denmark, I am quite used to that way, we are in the same platform and we can talk to each other about the same thing but sometimes, I know some of the people, the Chinese new graduate people, they treated the Danish colleagues or Danish managers much higher than them. Actually, that's not good for your jobs because then, that means you will take orders from the managers or the colleagues, even the Danish colleagues, they are in the same, yeah both engineers, but still this thing they will take orders or take the, ask what they will ask them to do but that's not good.” (C014)

Education & Work Experience

The other main difference that I have realized through the data collection and iterative process is that the ways Chinese and Danish employees learn and obtain knowledge are quite different and even though this primarily takes place in childhood, it molds and affects how we as individuals further learn and interpret information to create knowledge in our adult lives. Why is this important to Grundfos R&D and its ambitions to establish a global R&D network? In this specific situation Grundfos aspires to have global R&D network, but R&D networks are only structures created by individuals and *through* the interaction and connection of these individuals. More than likely they will share one specific characteristic in common—They will be Engineers. It is important for Grundfos to identify how difference the education and experiences have been so as to fill in the knowledge gaps as well as identify the strengths from the different ways of learning. The following excerpts are grouped into four categories: 1) Danish way-focus on problem solving, 2) Chinese way- Highly theoretical education, 3) Chinese employee takes Engineering education in Denmark and 4) Chinese Project Manager's perspective on how to cultivate knowledge for practical application.

We need to consider the starting point

The following excerpt from a Chinese employee clearly explains the reason why there needs to be focus on educational underpinnings, on critical thinking and problem-solving through their education and on inter- and intra-personal competencies:

*“The training for the engineer, if we have a Danish engineer, we have a Chinese engineer, we need to consider the start point, where they are from. For Danish engineer, maybe they can quickly adapt to the company. But for Chinese engineer, we probably need to pay more attention on the kind of fundamentals. **Most of the Chinese engineers, they are not so independent.***

*...From the primary school to the master degree, the pattern is like this: **they are focus only on to study, on the score of each examination and it's either the university have to continue to take over their life.** They don't have that; they are not so mature as a person in the society or in the company. They need a few years in the company to get mature but most of Western, all the Danish student, I feel they are mature as a person. They have skills and knowledge in the specific area is not that high but as a whole person they are very competent because they are more independent somehow.*

*But Chinese engineer, they are not so independent. They know a lot in their own field but how to interact with different people, how to talk to the different...I mean, this communication, is social things, they lack, and also, **personally I believe in order to have a good performance in the big organization, the communication skills and the network skills are very important even for engineer.**“ (C012)*

Danish Way- focus on problem solving

*"The core of a Danish Engineer education is really to **learn to solve problems. Identify the problem, find the solution, implement it and make the learnings.** That is really the core of a Western Engineer education. And of course then you get specialized in order to make the best problem solving within mechanics or electronics. But never the less as a Danish Engineer you are not afraid of electronics if you are a mechanic."* (C026)

Chinese Way- Highly theoretical education

The main issue with the Chinese Engineering education is that it is highly theoretical to the point where, *"Many of the engineers, more or less many of them that work with pumps have never seen a pump. so, totally misaligned."* (C028) And, *"They are not very broad. They have **not learnt the problem solving skills.**"* (C026)

Managers openly share that difficulty that they are experiencing with new graduates; Chinese engineers that are not prepared to be hands-on, *"There are some engineers we are getting that cannot do anything by themselves. They can only assist a more experience engineer. SO they really have to be directed. I think that it is partly the **education system.** But it is also a **cultural thing** that they have not learned to be self-leaders."*(C026)

Another manager was quite frustrated when connecting these very real issues regarding practical application, experience and self-leadership discussed above, that they are experiencing in China while management in Denmark have been, according to them, overly optimistic, in their expectations regarding Chinese Engineer workforce. They state in their own words, *"Chinese context: There are some preconditions for that example. And some people they don't like to hear it. Because many Danish people, "Wow in China there are so many engineers coming out of university every year and they are so good in China. And that is also true. Many people come out and they are good but the national culture and the way they are taught in universities is totally against innovation. It is **business as usual.** It is talk when you are asked to talk. Don't think anything by yourself, **Only say something if you are asked.** That is the whole school system. Even all the way up to university it is multiple choice. Even high level stuff."* (C028)

A Chinese manager himself, adds, *"You know what... you know this is merely the set back of our education system. People are not very much encouraged about to correct something. They mostly copy and follow. So, it is mostly of the culture."* (C025)

Chinese employee takes Engineer Education in Denmark

I had the opportunity to interview a Chinese employee that had taken their Engineering education in Denmark. They have had the chance to experience both sides of the situation. It was interesting to compare this take on the issue of education and work experience. What follows is their account of the major differences between Chinese and Danish Engineering education:

"As an engineering education, what I took in Aalborg University, (is) quite different as normally we do in China. In Aalborg University particularly it's a project-based learning. You have a real case from the industry, where you have a group of people, who have the

same interest with you, to work on the same thing and you don't spend that much [time preparing] for the examination.

In China, you have 13 or 15 different courses: mathematics, transfer of fluid, all kinds of things. And by the end of the semester, you have examination of each course you have. In China, we're not truly working on the real cases and mainly, we are working as an individual. You read all the books and you make your own examination but with the standardized examination.

*In Aalborg University, you have a group of people, who is more or less working in the company or something like that. You have to find the leader or kind of people to play the leader role in this group and you have to talk to the supervisors, or talk to the professors. And also, you have a connection to the company, which we have this case from. Then it's more or less, we are running a project and in the project, we have people that had their own position or role in the project. I'm good at mathematics, then I do the kind of calculations. You're good at physics, maybe you can make a kind of concept for this project. And you have mechanics, electronics then we can group different people. **It's more or less like a project; it's more close to the real world, in the industry or in the company.** That's a big difference.*

In China, the target is not clear what direction each individual or student should go.

*"But in Aalborg University, it's clear that we are hydraulics engineer, not as a scientist. So, it also makes a big difference. **Then we are more focused on the capability we should have, not necessarily on the knowledge of the mathematics, of physics but mainly about how actually you should work with people; how to problem-solving and then know the industry. That's give a big advantage for the students to enter in the real world.**" (C012)*

From the Chinese Project Manager's Perspective- cultivating knowledge for real world applications

A Chinese Project Manager shares how they coach and motivate Chinese employees, providing them tools to break down the major obstacles that according to this project manager is lack of hands-on experience, confidence and motivation.

*"I think, since I have this kind of experience also, I clearly know the engineer I have in my project in R&D China, which most of the people have the Chinese education and they are very skillful or talented with special skills, but they don't know how to work in a real project or in the company so then daily project management or daily work, I spend a lot of time to coach them: "Okay, you know a lot. You have a master in pump design but you only know the theory on that. You never designed a pump then make it work. Test it, have the performance validated and then putting it to the production and sell it to the market". **And then translate all their knowledge into the real benefits to the company or to the customer.** Yeah, they don't have the whole value chain experience so I paid some attention to that." (C012)*

7.1.3 Grundfos R&D China Culture

The last section explored culture in people and their interactions, this section will explore culture in the context. The data can be further grouped into three underlying sub-themes: 1) Grundfos Values, 2) Adaptability and 3) Learning through Creativity.

7.1.3.1 Grundfos Values

Even though R&D China is a relatively new organization, Grundfos values can be seen and felt. You can see a lot of work has gone into making sure that “the Grundfos way” is part of being part of Grundfos in China. One manager acknowledges that, “*I think a lot of competences for the Grundfos ways are in Denmark. We need them¹³ to build up the competence here and to maintain the Grundfos values and the Grundfos way of doing things.*” (C027) Grundfos does have a long history in China so it may be relatively easy to embrace certain aspects of the Grundfos culture. However, there are three key characteristics of Grundfos culture that have been a challenge in R&D China. I take a moment to consider again, these characteristics are reminiscent of interpersonal competencies or skills possessed by individuals.

Networking style- meetings and roles

Grundfos R&D prides itself on being a network organization, on providing R&D employees the freedom to be innovative and creative in their work. This autonomy Danish employees have been fond of may not be an entirely Danish phenomenon and it more likely a Grundfos phenomenon. The last section truly shed light on this “cultural” issue, which is truly a communication issue. The Grundfos value of networking is not clearly explicit, no one is really introduced to it, but everyone is supposed to know it and use it... The following excerpts from both Chinese and Expats in R&D China illustrate the problem.

In this first excerpt an expat describes the procedure of meetings and roles and the expectations that come along with these; acknowledging indeed how the communication is the major difference between Denmark and China.

“This way of communicating maybe also is one of the places, where you see the difference between Grundfos in Denmark and Chinese culture because...all those meetings and that our development process is based on these roles. I have the role from the [specific name omitted] department, so I need to say this. You need to defend your design and somebody needs to push the time schedule.” (C023)

Not only are meetings an important aspect of but the roles are as well. Everyone has a role to fulfill in the organization, the processes are created to organize the notoriously abstract development process and the roles are defined to achieve their goals.

The following excerpt touches on personality together with communication and how for this particular employee how it comes naturally to talk and make connections with others, even across departments. Even more revealing is what he says about other type of people—people that may want a more structured working environment—basically, Grundfos will not be an easy environment to work in.

“Depends on who you are, I think. For me, it is not difficult because I like to make networks across departments, but if you don't like to do that, if you want to work in a box not in a negative way, but if you want to access information in a structured way like a database, I think Grundfos is very difficult.” (C023)

¹³ Them is a reference to the specialist (visiting or expat) from Denmark that can as advisors to the employees in China.

Flat Structure, Egalitarianism, Direct Communication

"I think the through the R&D China you can... feel it quite equal. I think the feeling here is quite different as when you're working in some other company in China. But here is quite equal." (C010)

Chinese employees have been quite clear about the stark differences between Danish managers compared to Chinese managers. Over all, there is agreement in that Grundfos has an, *"approachable management"* (C010). However, perhaps this very new found freedom in communicating with management can be overwhelming and it can be, as it is with all new things, frustrating to identify processes for how to actually communicate. The lines are not defined; these are new territories and these employees do not have the tools for fully understanding their "new" environment (it should be also noted here that this does not seem to be a Danish-Chinese culture issue rather a context and communication issue. I can conceive that there have been some Danes overwhelmed by the style of organization when they started in Denmark as well.

Teamwork is vital aspect of the Grundfos culture, as one interviewee stated, *"If you can't work together you can't work for Grundfos."* (C029)

Another aspect of the Grundfos organizational style is the direct nature of communication. The following Chinese employee reflects on the differences between Chinese and Danish organizational styles and admits that most difficult challenge is the direct communication style.

*"In Grundfos, it's a little bit different, they're more **flexible** but also the big challenge for me is when they do some communication--they're more **direct**. So, sometimes that would be good or sometimes would be bad. So, it's good to get things done and to point out the problems in a project but there are things probably sometimes may not feel bad."* (C017)

The following excerpt is from a Chinese employee comparing Chinese managers (outside of Grundfos) with Danish managers and how informal the communication is in Grundfos.

"In the relation between the boss and the employee is not so big gap in Grundfos. In China, it tends to be a bigger gap... "The boss is boss and you must, before you present a talk or something communicate, you must prepare in yourself perfectly and in Grundfos you just talk of what you think." (C018)

From this interview I gathered there was a sense of uneasiness about the way the participant expressed this sentiment. It was not necessarily a compliment for Grundfos. Perhaps this is one of the issues, Chinese employees may not respect the freedom in Grundfos structure and therefore have a difficult time accepting and embracing it.

Importance of being Self-lead & direct communication

While the above points are all significant in Grundfos R&D: networking, teamwork and flat structure/egalitarian working culture there is one aspect that gets left out quite often; and that is the need for self-leadership. As a Grundfos R&D employee one needs to understand how to navigate multi-layered network structure, understand how to work in teams but also be able to work independently and be disciplined enough to identify opportunities and be strategic in your selection and participation. The importance of being a self-lead person is not really emphasized in Grundfos R&D at all. I believe this is one of the main reasons that some employees have a difficult time

navigating the internal networks. A Danish expats reflects on this by stating, ***“Because it is a networking culture [and] it is very very difficult to get started.”*** (C028)

7.1.3.2 Adaptability

When working in R&D China one of the key competencies necessary to work in this environment is *adaptability*. Danish expats as well as Chinese employees need to be able to work together and that means that sometimes we need to compromise in some areas to be able to successfully work together. As expressed in the expert below, a Danish expat shares his realizations of the importance of adaptability:

Another thing is that you think a little bit more about how you communicate with people. How direct you are... In Denmark I am more direct. I am still direct here. I normally don't hide what I mean or what I feel. But here you have to be more conscious about that. Because you should not try to hurt other people. At least you should not do it in front of others. If you have some serious then you do it by email or by face to face. And I think that maybe I become more round. You're not so sharp.” (C029)

New Habits need to be understood before they are learnt

The formation of new habits is of great significance as they signal the coming together of the network. The following excerpt focuses on another expats realization of the layers of work that it takes managers to establish a new global location. This excerpt is important because it frames the needs of managers, expats and Chinese employees for understanding and learning how to understand one another in the various contexts that they exist in, for example, R&D China, Grundfos China, Grundfos Group, Grundfos R&D and Grundfos Global R&D Network, just to name a few. Before R&D China is successful in the various contexts mentioned above, it needs to be function at its best within its own frame—R&D China. In order for it to do this, there are basic understandings for how things are done. Organizations have processes but if you break it down for the individual person, they are in essence, habits, as this expat calls them.

*“But I think, in our office, but also for, it's a kind of habit to build up also and I think we build that up in our office now **that [the Chinese employees] can question**, that they can challenge their managers and they don't need to think that whatever we say, [if] everything is correct. It is okay to question or to think differently and have a discussion about things. I think we have built up that habit now, but it was not there in the beginning. So at that time it was even more important to ensure that communication was understood.”* (C027).

From Individual Performers to Team work & Collaboration

There seems to be a long road from how Chinese employees are used to working to how Grundfos needs them to work. The following excerpt is from an expat that recounts how project team members were not working together. It illustrates again the point discussed under the main differences in the last section—fundamental educational differences affect how individual behave, and are expected to behave. Chinese employees are taught to succeed individually. Grundfos is asking Chinese employees not only to be highly talented individuals but also great team players that can share and work towards a common goal. This is again, I believe, a new perspective for Chinese employees and it shows the need for adaptability.

*“They tend to **work individually**. I have had some struggles with some of them...really to make them work together. I have seen examples where they even hiding information from*

*each other in the same project. The reason for it was that two engineers one of them was not technically strong that I could also see and the other one was somewhat stronger. I think that guy felt demotivated by working together with someone that was lesser quality than he thought he was. And then he didn't want to help. And that creates a lot of frustrations. And I even had the Chinese project manager helping to sort out these things. But he was also powerless he could not do anything. And I would not say we made it really good but we needed to sit out with them and say **we are here to work together** and that is part of the game.” (C029)*

7.1.3.3 Learning through Creativity

In R&D China the managers created an activity around the Innovation Intent. The activity does not have a name as such, other than working on creating ideas through the Innovation Intent. This activity works on many levels. It allows engineers to be creative and think outside normal working parameters. It allows employees to practice teamwork. It also allows Chinese R&D employees to practice how to present and debate their ideas without the fear of being ashamed. Moreover, the activity develops the Grundfos Culture and Grundfos Group strategy through teaching the Innovation Intent. The following excerpt illustrates the above reflections.

Innovation Intent- molding the culture

“I think the Innovation Intent is a good tool here to raise the bar a little bit, to open the box. I think in maybe the Chinese culture can be a little bit different regarding thinking outside the box.

Maybe it is more about trust or something”, the idea that you could be open and share brainstorming and ideas is not an everyday occurrence for Chinese employees as it is for the Danish employees. The interviewee adds, “you can present some kind of...it's allowed to present an idea that has not been proven, the concept you don't know if it's proven or not. So I think being able to present ideas that you don't know if they are solid or not--I think that requires something some courage or something, very interesting but it also requires something back to the organization that will process it--to be able to take it up and evaluate it and not just saying, ahh it is just a stupid idea or something. You need to take everything a little bit serious and maybe you cannot use all elements in the concept but maybe some of it. (C023)

I think the Innovation Intent opens a little bit more by presenting that it is the long term target- is to open the box and to take many steps forward. (C023)

7.1.4A Chinese Perspective on R&D in Grundfos

This is the last section under the Culture theme for R&D China and it covers a Chinese perspective on four important aspects for R&D as well as for Grundfos. I believe there are clues that could help us better understand both the content and context of R&D Grundfos in China and are thus essential for creating and improving collaboration in R&D:

- Networks
- Innovation
- Power
- Working Styles

7.1.4.1 Understanding of Networks

Putting Things into Perspective

The Chinese population is over 1 billion people. For the Chinese people networking is essential for their success. China is emerging as a world leader in many areas and the Chinese population is becoming more educated, has more purchasing power and is forecasted to continue to expand exponentially. Many of the younger Chinese people are moving to bigger cities in order to have better chances of success; getting an education and “fighting” to get the right job. On the other hand, the Danish economy is a mature one and therefore, many new graduates are having a difficult time finding top jobs. The Danish population holds steady at ca. 5.6 million people. There seems to be much more immediacy for their needs to build networks as if their life depended on it. From the interviews and overall data collected, Chinese employees need to build networks in order to make sure they secure a successful future. The following excerpt from an expat explains the Chinese perspective of networking.

Of course you cannot say all the Chinese are the same you know. The Chinese that I know have a network but no friends. That's different. They use the network for business not for relationships. So the network is based on benefits. And because they don't have a lot of free time to socialize. They don't socialize. In my way, they do not personally socialize. They do it with the networks maybe but that's because it's network. Because they have to kind of; they see it as an investment...But I think the Chinese are much, much better at networking. They keep connecting because they know it is networks that help them in future.” (C027)

Building Networks (at work) is not Building Relationships

“...at Grundfos [whenever] you are doing something, relationship is very important. Actually making relationship—very important—is something like Chinese word “Guan Xi”; so relationship is very important.” (C015)

From a Chinese perspective networks and relationships are not the same thing. From a Danish as well as a Grundfos perspective networks are synonymous with relationships. The following three excerpts point to the distinctions between networking at work and networking outside of work.

According to a Chinese employee, “*building relationships and building networks are not the same*”. They describe how their colleagues can be social in their personal life but not really come across that way at work. “*I saw in my employee that he's really good at building relationships after working. He can enjoy dinner with his friends and they talk a lot. [However], during work [he deals] with people with different personalities. The Chinese employee ponders, “... (perhaps it is) his mindset.” (C021)*

“During the work, actually we want to build networking not because of your interests, not because your personality; [Westerners] like these people, [then] you build networking with these people. [For Chinese] it's because it's part of your job requirements. Then we need to build more networking as a support of job in the future. You know the people then you can get better along well with the people. So, I feel the Chinese culture about building networking, not networking, they building relationships. That is built with people similar with you.” (C021)

“China culture likes to build relationships. But, they want to build relationships like with similar people, not with the Western people. So you are very open and I'm not very open. Not so open people want to build a [network] together; so not mix too much. I think that is the

difference.” (C021)

According to the above Chinese employee Chinese people hold a definite distinction between work and personal life and perhaps this will never change. Building networks at work is purely to satisfy the essential tasks one is responsible for (and make work life better) and in general, nothing more. Building networks to a Chinese person is about establishing relationships with similar people. This perhaps is one of the reasons why there is not very much intermingling after work between expats and Chinese employees.

Building Relationships

Some similarities do exist, according to an expat they point out that Chinese and Danes build up their core support network from their childhood, therefore as adults it is quite difficult to get into the core of a person, regardless of the culture.

“I mean it is not easy to get into the core of a Chinese but for me it’s also not too easy to get into a core of Danish and I think because you build up your relations and the same the Chinese is doing that during their whole childhood. Your friends when you grow up and get older are often the ones from your school or universities. You seldom bring new, more or many new people into your really, really close...Network yes.” (C027).

Grundfos R&D should identify how they want to define networking and what they want to achieve with it for Chinese employees to understand the mechanisms behind the concept. For Grundfos R&D and its ambitions of a Global R&D network there is a need for R&D employees to build relationships at work. These relationships will facilitate task completion and project success.

7.1.4.2 Understanding of Innovation

Let us consider for a moment that the two main differences identified in section 7.1.2.3 are accurate, that communication and education are the main differences between Chinese and Danes (Westerners), and then the concept of innovation is going to be a difficult one to grasp. The following expat and manager talks about the problems they are having:

“So the whole concept of innovation when you talk with a Chinese guy is like they are uncomfortable with it. Taught to not think outside of the box so to speak so this would be some of the barriers, especially when you have them interfacing with a colleague that is completely comfortable with the idea and concept of innovation, contemplation and reflection.” (C028)

Understanding Innovation can Improve Collaboration

The data continues to reveal to me that the culture issue at a micro level is more and more about the inter- and intra-personal skills. So I intuitively asked a follow up question during the interview regarding how understanding innovation would impact their relationships and understanding of one another and the expat replied, **“Huge impact because they are totally misaligned in what is ok and what is not ok, how do I spend my time and how my working day is and what am I allowed to do. Even what they expect from one another (unspoken expectations).” (C028)**

I see a direct correlation between understanding these core aspects of Grundfos R&D, such as innovation and what it means for Grundfos and for an R&D employee working for Grundfos. As the expat mentions in the previous excerpt “contemplation and reflection” are critical aspects for creativity and innovation.

7.1.4.3 Understanding Power

Another important aspect from a Chinese perspective is leadership, or power in the organization. The following Chinese employee explains the significance of power, which for them is synonymous with leadership and authority.

“We need some people to think about who will take care of this area and how we can make things better. We need some power; only the one has power, has the right to ask people to think about that, to do that.

So the person that has the power has influence....to make change. That's the Asian way or Chinese way.

It's, it's not like Denmark. I think in Denmark the style is different. You will do what you think is okay or you will do what you think is right. So every engineer they... can have some power, they can organize these things.

But in China the organization or... the culture is quite different. If you, even you know to do this things is right, you need authority to do it otherwise people will think you are weird it's not your responsibility, why you're doing this. So it's quite big a risk to do that...'cause you don't have this power or you don't have this authority to do that.”(C010)

From a Chinese perspective powerful people, usually management, are those that can make change happen. The problem for Grundfos R&D China is that the way Grundfos R&D is used to working where all employees have influence and power goes against what Chinese employees know to be generally true for them outside of Grundfos.

7.1.4.4 Work Environment & Working Styles

While Chinese employees work very hard to adapt and take up Grundfos and more Western/Global cultural attributes, there are such things in their working style that prove difficult to change. For example, one Chinese employee considers their process if they did not know something, they would 1) *“learn by myself and search, this is very important”*, 2) *“review with internal colleagues; this is an internal review”* and 3) *“communicate directly with Denmark”*. (C013)

It is a Chinese attribute to internalize the problem and try to solve it before asking for help or even asking questions.

“For me, I don't like always to ask. First, I start- always to think over it and find out some solution or find out what is happening; then if it is not okay, then I ask for other people. You have to think over by yourself a lot. You need to prepare a lot about the task. Understand them all, understand deeply. That is very important.” (C024)

From the data I have realized that Chinese employees think this way for two primary reasons: 1) They perform individually, as discussed in 7.1.2.3 where I identify the two main differences. From a Chinese perspective, they are educated to be individual performers and this together with the reason 2) Competition—there is so much competition in the job market, they do not want to appear weak or less competent, therefore, they believe that solving problems independently is the only way. Depending on others is a sign of weakness.

The following excerpt illustrates an example where a Chinese employee asserts that calling a colleague is synonymous to pushing or annoying them and thus not calling is respectful.

*"In my way, I think, to **call him directly is my last step** to the things because I believe it shows that I think he's not doing his job and I have to call him. Otherwise, I think e-mail or just normal ways is good. **I try to avoid pushing people**". (C016)*

Short-term focused; practical

The following excerpt from a Chinese employee also suggests the focus is generally not long-term or abstract.

*"For Chinese culture I think the one of the key things we summarize from the Chinese way Chinese people thinking that these very result driven, very **practical**. So sometimes you care about very short term, especially the sales are very **short term driven**. So we need to be careful with that, try to bring people back sometimes. Of course we're also trying to be result driven and be more specific. But we also need to bring people back to the more long-term perspective....instead of coming with some quick but not the better solution." (C020)*

Reserved and introverted at work

I have realized that there is a misunderstanding of how Chinese employees may have understood networking and building relationships. Perhaps they equate it with making friends. In observing expats work together they may have misinterpreted the informal, friendly and perhaps as time close relationships colleagues may have as similar to a friendship. The following excerpt explore a Chinese employees reflections of his relatively "introverted" behavior at work and how he has not very many "friends" at work.

"I feel this style, the working environment, I think it is good, but for me, I'm always a quiet person, I'm always quiet, so I don't have many friends (at work). Just, in these three years, I just connect with two or three friends. In my private time, I talk more, about a lot of things, about life, about singers, about going to do something. With these people, I talk a lot more but otherwise, I don't like to talk. (C024)

Experience breeds Flexibility

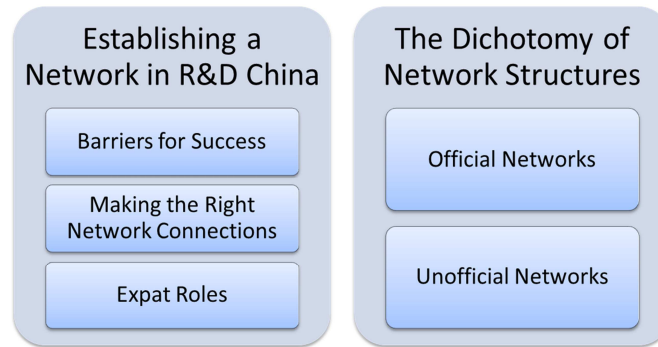
According to a manager, *"Experience makes them more flexible. Because it is not the young guys that are like that. Experience in working with foreign companies. There are none of the young assistants that are flexible in their mindset." (C028)*

The above point is further substantiated by an experienced Chinese employee that says, *"But, I think my job is mostly **affected by habit** because I have a long history of work in international companies, so I have a lot of training on the professional way, I mainly not only affected by our culture but also by some international globalization culture" (C025).*

Experience could be considered the hard way of gaining the knowledge one needs to "be more flexible". Perhaps it would be beneficial to both Grundfos as well as the employees to gain access to competencies or tools that can help them better understand why they should be flexible and then perhaps how to do it. Another expat has mentioned creating "habits", I agree that there should be habits, so that Grundfos can be proactive about the future.

7.2 Networks

Figure 40- R&D China: Networks theme - presentation of sub-themes & their underlying topics



7.2.1 Establishing a Network from China

7.2.1.1 A Barrier for Success-the context

The following two excerpts quite explicitly illustrate the situation in R&D China with regards to establishing networks.

*“Yes, I think it is difficult because as a new employee here you don't know who to go to. First of all you need a contact person some initials and an email address where you can send a mail and ask them kindly whether they can help you with something. But maybe you are not getting the right persons, maybe you are getting some of those persons that have a lot to do and maybe they feel that this is annoying. ...why ask me, can't you ask another guy... And then that is maybe a bad experience for those new guys. But there is **no official way** of doing it. But the way we have done until now in order to compensate: ...the **Danes that are here (in China)** we use our contact network to make sure there is a kind of connection. A connection that we **trust**. That is one element. Another element is that we try to at least in some projects we try to link professionals in Denmark directly to some of our Engineers here. So they can say they have a guy in the professional area they can trust.” (C028)*

“So I think it's, for a new setup especially, it's very difficult for to find out to build up the network because you don't know who [to contact]. You have to find out yourself, also you have to find out for yourself who can you trust. And who can you [call upon] and who will support you like that and who you are waiting for ages.” (C027)

Based on the context presented above there are four main points that I want to acknowledge here:

- Concern with “no official way” of establishing the networks and thus potentially leaving new employees floating
- Expats are used as a link to the greater network
- Connecting without knowing how to network (skill-set necessary)
- Trust is essential for building the networks

Exploring the context, I can identify the relational aspect of establishing networks. Both excerpts above point to the need to be able to trust contacts and the importance of knowing who you can call upon to support you. Therefore, simply stated, networks are built up by people. If there is no

“official way” then why not acknowledge and adapt the simplistic approach –talking and building relationships. Networks are built up by people. Individuals need to interact, exchange ideas and exhibit interest and share information and knowledge. This is the essence of networks.

Interaction & Building Relationships are Essential

Networks are relational linkages between individuals. The following excerpt illustrates the need to ‘talk to people’ to share information on different levels.

“I believe you need to prioritize to spend some time to talk to people. I think that's my key element and of course it has a cost because the time I am talking in the kitchen with someone, with a cup of coffee in my hand, I don't produce anything.” (C023)

However, it is important to point out here that while that time is not being used to ‘produce anything concrete’ that it is understanding what others are doing around you that you can better produce not just for your immediate needs but also for long term needs and perhaps make additional new connections that you had not identified before.

This Danish expat also adds, *“It's important for someone like me that I understand what is around the topic but of course this will be a huge task to document in a structured way and to describe it in detail, how everything is linked so sometimes I feel it is nice to talk about the big picture together with a lot of different people.”*

You should be able to scope your daily work or to accept that you don't have eight hours work. Maybe I say to myself I have, for example, between four and six hours I can work in a day and then the rest of the day is small talk or it is about real topics. (C023)

So getting a cup of coffee with someone or eating lunch can be more than just about these simple encounters, it is the investing time into identifying common interests and laying the foundation for future collaboration.

Chinese Project Manager's advice for Project team members—talk

*“Actually, I encourage my team members--they should have more chance to talk to Danish colleagues because if you have more communication with them maybe [they will know] what they mean. [If you consider] what was they're thinking...**first to know the people then you will know what they are saying; their meaning.** So, I encourage them to have more talk with them. I think this is the most efficient way to use to this kind of environment.” (C017)*

In addition to being more open and talking with Danish colleagues when they are visiting R&D China, managers and project team managers have experienced that once Chinese employees have an opportunity to visit Grundfos Denmark their ability to connect with Danish colleagues is improved, implying that face-to-face communication is the best source of establishing relationships and connections between Chinese and Danish R&D employees. The following Chinese employee discusses how he is more confident about whom to contact after traveling to Denmark to get training, *“I think that, when in my daily work, if I have some question or I need some support, I know which one is my best contact”.* (C009)

When Chinese employees travel to Grundfos Denmark they have a purpose for their visit and they are able to talk to their Danish colleagues in a purposeful way that is perhaps easier than just a random conversation with a stranger. Small talk is easier once people know each other. As the

project manager explains above, first you know the person and then you will better understand their meaning.

Matching employee needs with the organization's future ambitions

I wonder though, Grundfos is on a trajectory to meet the ambitions set out in the Innovation Intent and Group Strategy and if this is the case, and the cost of face-to-face visits will also exponentially increase. When I asked a manager if he believed if it would still be feasible in the future, they stated, *"No, no. I think that through the work we are doing here that we will slowly change it. So that we can make this Chinese organization come closer to that part of it in the culture we have in Grundfos because as we talked about it, [the Chinese employees] have this national culture but some of them can totally cope with a totally different set of values in a company [setting]. I do believe that we can slowly change it into that they break more loose from that mindset that they have to see people [in order] to interact."* (C028) According to this manager they suggest that with time the core cultural aspects that make Chinese employees need to "see people in order to interact" will slowly change and thus not as many employees will need to travel for network building. However, he did note that, *"there is a critical mass of employees that would need to still be on the move. I really believe that that we will need that for many many many years."* (C028) So the idea is to establish a solid foundation for R&D China where Chinese employees have an understanding for core Grundfos values and organizational styles and that these employees will pass on this culture to new employees, thus reducing the need to travel for network building.

7.2.1.2 Making the Right Network Connections

In the above discussions I wanted to present the context with regards to networks in R&D China. Here I will explore the importance of making the right connections that has been insinuated to before. The following excerpt from a Danish expat discusses the real difficulties of knowing the right people in Grundfos and with their new job in China they need to work on establishing their network as well.

I also think for us is also so much about our network the easier way of communicating and you know inside [Grundfos Denmark] there is so much knowledge that you can gain if you know the right people. "That's the difficult part to get to know the right people."

Even for Danes that are stationed in China, establishing new networks that support the new job tasks is not as easy as it may appear. There is one account of establishing a new network, *"I spent a long, long time on that as well, building my network for this job the last three years, I have a whole new network. That was actually hard. That was not easy."* (C027).

It also depends if you are reaching the right people and if the people you are reaching have the right state of mind that matches with the ambitions of Grundfos becoming a global leader and having a global network working environment. In a very candid interview another Danish expat admits that it can be very tedious to work the network from China because you can work really hard to get a network connection going, *"But maybe you are not getting the right persons, maybe you are getting some of those persons that have a lot to do and maybe they feel that this is annoying and say 'Why ask me, can't you ask another guy'."* (C028) So there is yet another layer to this situation that you may reaching the right contact, however, they are overburdened by all their tasks, so how do we prepare Grundfos Denmark for the globalization that Grundfos wants to achieve?

7.2.1.3 Expat Roles

The importance of expat roles was introduced above. Admittedly, all roles not just expat roles should be important to explore. In exploring expat roles I do not dismiss the significance of other roles, rather I want to draw specific attention to the role of the Danish expat in a young set-up such as R&D China. It is essential that both expats as well as their Chinese colleagues get the most out of the networks and relationships they are creating. As a Danish expat explains, *“the Danes that are here (in China) we use our contact network to make sure there is a kind of connection. A connection that we trust. That is one element. Another element is that we try to at least in some projects we try to link professionals in Denmark (in Grundfos) directly to some of our Engineers here, so they can say they have a guy in the professional area they can trust.” (C028)*

There are several reasons why this should be a point of concern for Grundfos, specifically when taking into consideration their ambitions for a global R&D network. Firstly, the needs of expats upon their return cannot be an after-thought. In an organization that prides itself on being a career-building, there should be explicit career paths and future opportunities discussed and accounted for before the journey begins. Expats become what I would call “in-betweeners”. Simply put in-betweeners are expats that come home with additional perspectives, understandings and experiences. This new knowledge and experience and most importantly connections provides them with the ability to identify situations, opportunities and problems that have not been abroad cannot see. This is the diversity that is talked about in the Grundfos branding mediums, and it is being integrated and infused into the organization as we speak, however, it can be lost if we do not know how to preemptively plan for its use.

The second reflection from the above excerpt is two-fold.

1. We cannot continue to pull on expats “trusted connections” because let us be clear, an expat only has a limited amount of “trust connections” and it will only be a matter of time before they are exhausted If they are the only source of expanding global networks.
2. On the other hand there is a very real problem with connecting individuals together when one part of the link does not know how to use the connection. So, without training Chinese colleagues in networking and giving them the confidence to understand how to pull on the different resources, the likelihood as some interviewees have noted is that the connections become dead links, in other words they are never used. The main reason why Chinese employees do not use the connections that are provided stems from cultural underpinnings, however, the solution for how they will begin to use these networks and create some of their own network relationships is through interpersonal skills not cultural training.

7.2.2 The Dichotomy of the Network Structures

Official Network Channels are Slow

“My experience with the official channels is that it is slow. Because people they are busy. A lot of people are busy and if you ask their manager, ' Can I use one of your guys for one day?', then some managers they don't feel they can say yes. Then they need to ask somebody else in that project that guy is in now. One day is a little bit extreme but I have a recent

example.

"We are getting some of my old colleagues in November and for two of the guys it is no problem because they are from my old department so I have a good relationship with my old manager so of course we agreed that this a good idea they come out here because this something for the future of what they are doing in Denmark and for the future of what we are doing here. So obviously it is a good idea. But the third guy that we are very much depending on he is unfortunately in a project that has some priorities then even though they agree this is a good idea then they cannot come with any answers. And they don't come with answers before you really really push them.

*And that is what we talk about people here, **functional managers and I am not impressed that people in that role cannot make more strategic decisions.** Ok this important and of course I know he is loaded in that project but then we need to help him in another way because everybody is agreeing that it is a good decision so it is just about making the decision (to prioritize) that people should go here. But that can be very slow if you don't push it. And of course if sometimes, if this does not work then I even have to have [other managers] push higher in the system and then I think that's a bit too stupid, because **then it is not a collaboration.***

No, that's not a collaboration but it is because as I see it the Danish organization now they are quite busy and some people have more than what they can do and of course if somebody asks that guy could you go to China for 14 days the guy he will say yes because he thinks it is also a good idea but then the managers and the project managers say no no no no because we have this deadline." (C029)

There are many projects, many interests and a lot of politics underlying the official network structures. The above excerpt points out the issues with regards to flexibility, and adaptability and decision-making. As the participant explains when you have to push people through formal structures then "it is not a collaboration". When managers and project managers can only be invested in so many areas at one time and there will times when they will need to choose. In this case, not choosing is the same as choosing. By not making an explicit decision, they create more friction for everyone. However, we have to keep in mind in organizations such as this, where autonomy is of great priority we have to be careful how much pushing management does, as not to create friction themselves. It is clear however, that more clear decision-making roles are needed in the official network, especially for times like these, when strategic decisions have to be made.

Unofficial channels

Part of the reason Grundfos works as a network organization is that people use each other, unofficially to eventually create official things. This has never been an issue since all R&D employees were in Grundfos Denmark. The following Danish expat reflects on how it is:

"That is the way Grundfos works. Because and you can say some bad things about that but you can also say a lot of good things about that. because it is also the way you can, I think that is maybe the way that you even though, you can promote your good ideas in the canteen. You can talk to people over lunch. You can place your seat around people and suddenly you can get more understanding for your needs. But that's then difficult when you sit in this office [in China]. Because you are not eating lunch with these guys...that is only when you are in Denmark that you can do that. So, when you are under long distance then it is difficult". (C029)

From this perspective, proximity is important for developing the network. IF you do not have the opportunity to socialize than you lose the opportunity to influence.

Another aspect of informal networks is in situations where you have urgent need to get things done in Denmark but you are China. You need to know people that can help you, that you trust. The following Danish expat also reveals that sometimes having an extensive network makes it easier to circumvent official networks to get things done.

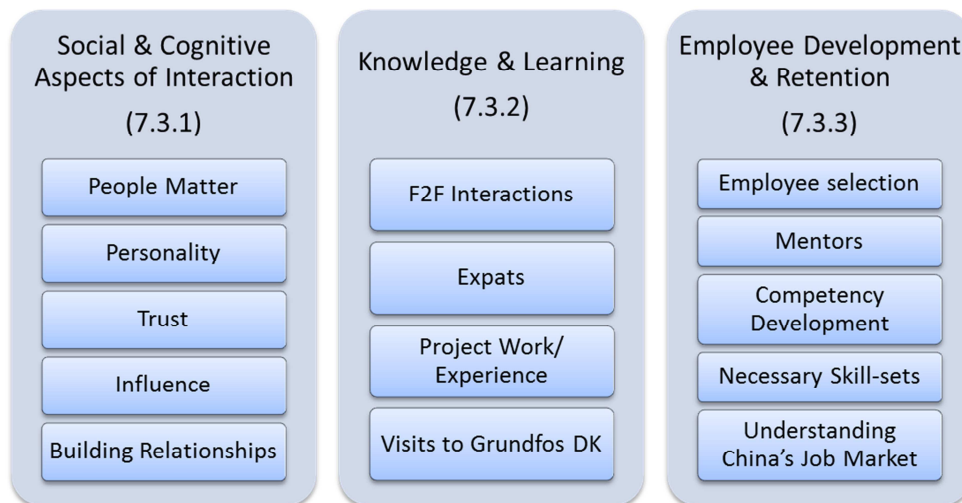
*“Both unofficially sometimes **you have been in Grundfos for so long you** can shorten circuit the organization because you “KNOW” people and I do them a favor and then they do me a favor. Then you get something done. Other times of course it is more official, you ask people or their managers can you help us and that is more depending you can say depending from time to time what is the most appropriate way of doing it. Also sometimes it also depends on if you want something done now and it is really important for you. Then you need to utilize your network. My experience with the official channels is that it is slow.” (C029)*

7.3 Individuals and their Interactions

“At the end of the day when you look at networks we are all people and individuals that impact how we function together.” (C012)

Up until now we have explored culture in various forms and in networks, however, I have realized that both of the previous themes: culture and networks have always focused on individuals and their interactions. The data has continued to show the importance of people as exemplified from the excerpt above. Therefore, this section presents theme three: individuals and their interactions. I have further organized the emergent data relevant to this theme into the following three main sub themes:

Figure 41- R&D China: Individuals and their Interactions theme - presentation of sub-themes & their underlying topics



7.3.1 Social & Cognitive Aspects of Interaction

This sub-theme focuses on both social and cognitive aspects of interaction. First I present data that illustrates the significance of the individual. Thereafter, I explore four additional characteristics of individuals and their interactions that emerged from the data: 1) personality, 2) trust, 3) influence, and 4) building relationships. Before we go on I selected three excerpts that illustrate the importance of people for networking, collaboration and creating innovation.

7.3.1.1 People Matter

The following three excerpts: interaction, teamwork and information and knowledge sharing provide fantastic examples from the emergent data of the importance of individuals and their interactions have on dynamic, involved activities such as global R&D collaborations.

Interaction

The following excerpt of an expat represents significant revelations between interaction and acquiring knowledge.

*“We as individuals tend to learn better when we see things being done. We have that part, I think, no matter where we come from. **A part of that is that we tend to learn better and understand better when we interact.** But the networking is a huge part of it.” (C028)*

Teamwork

The following excerpt from a Chinese employee points at the importance of teamwork; noting that is it not just that people work together but that more comes out of the efforts of the work that is done together.

*“I think **teamwork** is something we mentioned pretty [often] because no one can be independent or too close everything especially given the current situation. It's very important. Teamwork means you share the vision, you work for the same direction, but also, **I think, teamwork means the synergy of the strengths from everyone.**” (C001)*

Information and knowledge sharing

Imagine all the fanciest technologically advanced knowledge management systems in the world and in real life it comes down to people and how and what they are willing to do for each other. This excerpt from a Chinese employee may at first glance appear simple but in reality this statement is not just about identifying the right people to contact, it is about the power of connections, it is about people working together to facilitate the right contacts and this is of course not just about the information as in know-how, but also the know-who and the willingness to share.

*“You know, **if you find the right people, you just find the right information, that's very important.**” (C015)*

Who are the right people? The right people are the people that can either help you or can point in to someone else that can. People in the overall R&D network are links to others and thus they have the power, to either open or close networks for others, something to consider. I would add that first it's a matter of information, e.g., I know three people that understand motor technology for submersible pumps and I know a person that needs to talk with them. I introduce them. But we should stop to consider the true power of networks. In the Network theme some participants discussed the expats use of their own networks to help Chinese employees get started building their networks and the potential problem with exhausting expat networks. That is why it is important that all individuals participating in the R&D network understand their role as facilitators; Grundfos should not be interested in keeping gatekeepers (those that control access to information or people). If we all have the same mission and guiding star, the Innovation Intent, then it should make sense that people will need to be more willing to work with one another.

7.3.1.2 Personality

The following excerpt is from an interview with a Chinese employee, where I had asked, *‘how culture affects your job?’* And while they believe they understand networking and the building of relationships, they can see how new Chinese employees do not understand or possess networking skills. They point to two possible reasons why networking can be difficult for Chinese employees: either language or personality.

*“In China culture, actually we like to build relationships, but according to current employee personality for unknown people, maybe **not easy to build networking**, I feel in my team. But, they need to change their mindset. For me, not a big, not a problem. I can speak to any new*

person in any organization because I already change the mindset and culture. But, in new employee in my organization, according to their personality, some employee, you already built the network for him, but he still not really use it. Maybe because of language level or because he thinks the personality not really like communication. So, I feel the culture is okay, not really affect too much the job, but the personality really, really, affect their job. Depending on we choose the right person for this job, then no culture issue.” (C021).

I would like to point out how they state it’s no problem for them ...”because I already change the mindset and culture”. While on the one hand they do not want to see it as a culture issue rather a personality issue they also state that they have changed their mindset and culture...

The right person for the job understands the competencies that are needed to fulfill the job despite of their cultural background. For some few they start already knowing this, however, for the grand majority this is something they learn on the job. This is what the participant refers to as changing the mindset and culture (or creating habits).

The subtle distinction in this excerpt between individuals and culture is one of the reasons the data continued to lead me down this path of exploring the individual’s role in culture and in the dynamic context. This excerpt points to practical application of culture, which is among other things, the individual’s role, identity, and personality in the organization. The individual has certain habits based on the cultural manifestations they have observed, however once they enter into the new context, i.e., Grundfos, it is important to identify new habits to go along with new norms and the expectations that lay therein.

There are people that prefer not to be social, introverts, but that does not mean that they cannot be successful participants in knowledge networks. Just as with anything else, individuals can be provided the information to learn tools to be able to successfully perform.

The following excerpt from another Chinese employee adds to the above discussions. With over ten years of experience in many countries and cultures this participants said, “*Personality is more important than [the] culture background and the core value [they] hold is more important than [their] cultural background. But you have to understand that part (reference to cultural background) so when people show good dedication to [their] work [they are not taken for granted].*” (C015)

I am beginning to embrace the individual is contextual and contingent on other things such as emotions, needs and motivations as opposed to cultural definitions.

7.3.1.3 Trust

The following two excerpts the first from a Chinese employee and the second from an Expat are both examples of the importance of trust as a major component in working together with others. The Expat compares trust to integrity and integrity they define as delivering on your promises. Both excerpts focus on *accountability* and *reliability*; both key factors of successful relationships.

“For me, I think trust is if you say something, if you promise something, you have to do that. I think that’s a basic thing. If you say something, if you say, you promised, you need to do this task, you have to do within the time.” (C024)

*“Trust is coming over time when you see that people ‘walk the talk’. They do what they promise they have **integrity**. They might be different. I have people in my network that are totally different from me but you can see that their integrity is strong. So they do what they say they will do. Then I think that you can easily also have strong trust across cultures. If you have an understanding and people they walk the talk.” (C026)*

Trust and Common Work Processes

The following story is about a Chinese employee collaborating with a Danish employee. The Chinese employee had emailed the Danish employee and had not heard from them. The Chinese employee did not want to call or email as they did not want to push. However, after waiting they began to feel, “almost hopeless” so they thought about contacting their mentor but at the last minute they decided to contact the Danish employee directly (This is very difficult as it goes against Chinese behavior). The Chinese employee was informed by the Danish employee that he has been working on it and that the, “result is coming very soon”. This is an example of a Chinese employee adapting to Grundfos and network behaviors. As the Chinese employee states, *“Actually, I think the first thing is trust. My failure was I didn’t trust that guy.” (C016)* One way the Chinese employee thinks he can build this trust is by visiting Denmark and meeting his Danish colleagues. *“So that’s the plan, I will go to Denmark to meet him face to face individually. And I can create my basic network. And based on that network, I can improve my daily communication, collaboration.” (C016)*

7.3.1.4 Influence

In identifying networks as relational, and in recognizing the importance of individuals in network relations we begin to pinpoint concepts that are of significant importance in helping us understand these interactions. One of these concepts is influence. Much of the data also indicates the significance of influence in R&D intra-organizational networks. The excerpt below is based on a R&D China Project manager (Chinese employee) discovering and presenting a project/product concept to sales & marketing responsible individuals in Grundfos China. *“At that time, when I had the kick-off meeting with the sales guy and even the marketing guy, they had no interest in [my idea]. He doesn’t know what will happen, but I know. I know my target.” (C008)* Later on the R&D China Project manager added that once he was successful and was able to present the now established project and customer then the sales and marketing responsible individuals were interested and willing to take on the task of continuing to nurture and establish customers and market relations.

7.3.1.5 Building Relationships

The following two excerpts are from one interview with a Chinese employee. From their point of view, Grundfos places too much emphasis on the relationship building perhaps at the expense of qualified people that can in actuality deliver good results.

Relationship vs. Performance

*“I think what I feel here overall it is a good company, there must be something good to show quite a lot tolerance. Sometimes it is [relationship] **overly important**, that’s what I feel is a negative part. If it is over important, **so the result orientation will be broken**. I mean what I feel here, a lot of tolerance for some low people, not high people but low people. It’s kind of saying if you have good relationship with the manager, even your job is just rubbish you are still very well. That’s what I mean [by] over important.” (C015)*

Performance doesn't matter over relationship

For example, *"Sometimes the guy's performance is very good, but then he cannot handle the relationship with the manager very well. So this guy is just criticized. So it's not good. We have to balance people relationship and the performance result, both things."* (C015)

The above two excerpts walk you through, first the identification of the issue: relationships are overly important. The second excerpt identifies the need for a balance "We have to balance ...relationships... and performance".

A Needs Focused Approach for Understanding Others

Whether it is talking to a customer outside of the company or stakeholders within the organization, the data showed a focus on **needs** in the practical daily tasks. A Chinese employee recounts how they identify the needs instead of focusing on cultural aspects, by doing so they elicit trust and establish a work relationship. Essentially, it can be summarized here as individuals create trust through mutual interest by listening, presenting and capturing from what [others are] saying; focusing on *"... what it is that they need."* (C008).

Another reason why focusing on culture in the everyday practices does not work successfully is that the concept is simultaneously too abstract and complex. During one of the interview's discussion of culture the following hypothetical situation arose: *"For example, if there are 10 Chinese guys in one room, then, I will do some general introductions. But before I want to deeply discuss with each guy I would want to know who [they are] and their personality, then I will go deep into the discussion."* (C008). This is a clear example that other factors such as needs and personality/identity may play a role in relating and understanding others.

7.3.2 Knowledge & Learning

"Knowledge is carried amongst people." (C028)

Large Multi-national organizations have attempted to adopt technical systems to manage knowledge. An expat acknowledged that this issue has also been discussed in Grundfos. However, they points out a case example of BMW where it was, *"recognized that it could not be done [so they had people that focused on it]. That was their focus; to share daily information and understand what was going on."* (C028)

There is a necessity to begin to acknowledge that Grundfos needs to treat the exchange of knowledge differently if they want to achieve their high ambitions. The following excerpt from a Chinese employee emphasizes the need Chinese employees have to understand and know more of Grundfos as well as the knowledge housed in Denmark, however, all parties also need to keep in mind that in general experience takes time to build. The changes that Grundfos aims to achieve will not happen overnight.

"I think that is very important because in Denmark, we have a big R&D center; maybe for our R&D China we can follow or get some experience from them and guide us step by step and build up our capability and experience." (C013)

There are a number of ways individuals can share information and knowledge with one another. As the above excerpt points out R&D Denmark is an established organization full of experts that are in a position to help a growing organization such as R&D China. However, the key here to remember since knowledge is carried amongst people then we must be willing to share as another Chinese employee points out, *"and if you are willing to share, it's very important."* (C007)

7.3.2.1 F2F Interaction: a Wealth Spring for Knowledge Acquisition & Learning

An Expat shares how face to face interaction is a necessary aspect of knowledge work.

“I would compare it to the gasoline you put in a car. Face to face makes a full tank of gas in the car and with all that gas you can go a long time but when it runs out you need to meet again and fill it up one more time. It feels like you are a little bit blind folded when you have these Adobe connect or video meetings. Even though with a Danish guy I can feel that when I am finished with the meeting I am 95% there. When I walk out of a meeting room in Denmark with Danish guys I can feel that now I am 101%. I am just a bit more confident that I understand what is really going on. Sitting in front of people [you are able to observe the] small things, you know when you look at people, <<nuances>>, [their] body language... because communication if you break it down how much is what we say and how much is our body language, more than half probably comes out of our body not out of our mouth.” (C028)

Interestingly enough the above excerpt draws attention to the necessity everyone has, regardless of their culture; so it is not about improving cultural communication, it is about improving communication at large. The Expat also makes references to body language and the variety of cues that individuals can pick up in a face-to-face meeting as opposed to more robotic or clean environment that exists when using virtual communication tools such as Adobe Connect or video meetings.

7.3.2.2 Expats—Knowledge & Information Access Points

As discussed under the previous theme: Networks, Expats that work in R&D China share their trusted contacts and extend their networks to facilitate new connections for the Chinese employees. The following excerpt is of an Expat explaining their role as a “bridge” between organizations.

*“But I also play a role in the project to challenge and to say are we doing it the way we used to do (meaning in Denmark how we are used to doing them at HQ) not that that is always the way we do it now. But also in some ways to challenge the project managers here so they are not totally pushed when they meet some tough Danish guys then they can practice on me first. So that is also very much part of the role I play here to be that guy that can challenge them. Because also I have quite an extensive network so I also use that to **bridge between this organization and the Danish organization.**”(C029).*

Danish Specialists function as Advisors in China

The following is an example of how Danish specialists are called in to formally facilitate and coach Chinese employees on R&D China projects.

“I think it is not a secret that all the competences are in Denmark. Some people have worked in our company in many, many years, we have many specialists and that is a great support to us. We set up in the projects can also make some agreement with some experts in Denmark so that we will have that, he maybe should spend 5% of his time for this project to support in a very certain area but he is specialist within this area-- and we will make that kind of agreement so that his manager also knows that he is supporting our team in China for something so he knows he is spending time on this-- we call it as an advisor yeah for this-- that it is very needed. (C027)

7.3.2.3 Through Project Work & Experience-the long road

There are many opportunities through the project development process to meet many different people throughout R&D but also from other functions. This is both time and success dependent, that is why I call it the long road. Especially for the Chinese employees this option alone is not sufficient for them to successfully expand their network. It can take too long and it is also dependent on success, since success will elicit trust and respect for their work.

“A lot of time our Chinese colleagues really need some people to offer technical support but they don't have these channels to do these things.” (C010)

Danish & Chinese Project Workshops (F2F)

Task driven team building is inter-woven when project teams travel to Denmark in order to get the most of the cost of traveling. The following example reinforces the reason why it is so important for project team members to meet. For obvious reasons it increases morale, also there is opportunity to ‘get close’ and build relationships based on learning to understand people in context. Face to face interactions creates a real context as well memories for those involved that they can recall and use in future encounters and interactions. Overall, these workshops improve future collaborations.

“Actually we had a workshop in Denmark and we shared the project vision and missions to the whole home project team. And by the workshop, we also got to introduce other team members for them to know each other and [establish] further cooperation. And also we create this opportunity for the people because before actually some team members they didn't have the chance to meet each other. So, this is the chance for them to get close. And also later, we create some cross function activities--deliveries and each of the team members could take a look into this sheet and to check what's the other function--what they've done and what is the status.

*“I get a lot of feedback not only from the team members but also from their managers. So, the feedback of this workshop was quite positive. Also, I see that **they get motivated** from this workshop. So, **everybody has clear picture of the project and also they [enjoyed] this workshop.***

Actually for this kind of workshop, we don't have so frequent--I think probably one year two times.” (C017)

7.3.2.4 Visits to Grundfos, Denmark

This last section deals with the improvement of knowledge due to visiting Grundfos Headquarters. These improvements can be identified through particular channels such as face to face meetings, of contextually embedded work and of getting a personal understanding for Grundfos Headquarters. Traveling to Denmark provides Chinese employees with the “big picture” and connects the work they are doing, the people they are talking to towards a more tangible understanding. The following two excerpts discuss how visiting Headquarters improves learning and provides Chinese employees a real opportunity to build relationships how they are used to, face-to-face.

Big Spike in Learning

“I have some of the young guys in here that have been in DK for 2, 3, 4 weeks working. That is quite [uncommon] for other foreign companies that they [invest for Chinese employees] to go to Denmark. But it is needed.” “If I have an assistant that is working purely to service a Danish team I know nothing about it, He needs to go there and learn what he needs to do.

When they come back they are another kind of person and also the feedback that he is given by the people in Denmark, "Wow! This guy three weeks it was like the learning curve was like this (visually indicates a spike in knowledge gained due to trip to HQs)", and that is because it is this networking culture that the Chinese have; they need to see people. It is very very simple." (C028)

Opportunity to Build Relationships

"I think the first important is know who I work with. It's the most important because when I go back to China and it's easier to communicate with them. For example, last time I went to Denmark and joined their party; it's very nice to play the game together and to talk something of life and personal things. It makes easy to talk. You know, sometimes if you're on the phone and talk together, they must control themselves and cannot open one hundred percent, and if after teambuilding or some party or something like this, it is easy to be open, I think, more than ninety percent." (C018)

This is significant for the importance of communication in this process and knowing how to bring all important people together; people that could be valuable to creating the best innovation.

7.3.3 Employee Retention & Development

The third and last sub-theme under the theme: Individuals and their Interactions is *Employee Retention and Development*. Under this sub-theme I explore emergent themes covering employee selection, mentors, competency development and conclude with exploring how we need to understand the context—the Chinese Job Market, in order to better understand the Chinese employee.

7.3.3.1 Employee Selection for Success

Based on the experience of the past five years the management at R&D China has realized that hiring engineers that are new graduates tends to create an unstable situation since there is a tendency of younger engineers wanting to change jobs with more frequency. One of the most experienced Chinese employees explained it in this way, *"If this guy is still young, is quite young like 25 or 26 years old, maybe he has not the right mindset. Then if you force to implement such a [direct] culture to him, that's not good to be honest. In my understanding that is why this year several guys leave Grundfos China R&D." (C008)*

In addition the market is overly competitive not only within the candidate pool but also within the foreign companies vying for the best candidates. Therefore, the focus from now on and towards the future is somewhat older, more experienced and settled candidates. However, as a manager points out that while this is a good age to target there are still three main issues that make it difficult.

"1) Many don't speak English, they want to speak Chinese.

*2) If they are older than 33, 35 they can be too Chinese. It's not for me to be discriminating but they are simply not **open-minded** enough for other styles, management, communication, styles. than the Chinese way.*

3) If they are about this age they want to take my chair half a year later.

*But we have succeeded finding someone that is more you can say, **adapted** to a more modern styles." (C026)*

Additionally, when recruiting new candidates R&D China is focusing on candidates' ability to collaborate with others. They need to be able to show, "***they can communicate with you, [show] whether they are open***". (C029). **One of the key ways of showing this openness is, "that they are able to speak up, able to challenge others but that they also able to be challenged without getting too embarrassed about it."** (C029). This way Grundfos is able to establish key collaboration skills at the interview process instead of having to develop them from scratch as they have had to do in the past. This will allow them to focus on other competencies that are necessary.

The following excerpt represents an Expat Manager's strategy for interviewing future candidates.

"When I do the interview, I shall test his characteristics and if he has a good attitude, to accept and if he is open, because I think that if you want to work in globalization, in a team, I need that kind of people. Mostly, they want to accept the Western culture. They cannot be too close in their mind." (C025)

However, from a Chinese perspective there have been too many changes in management and one Chinese employee points out too, *"Yes, this is also a reason for many people in engineering to leave from this year August to now there's three people in R&D including me, three people leave this department so that maybe a reason because for lot of Chinese people that don't like Chinese to manage an organization. They don't like because we always think the foreign manager is kinder to people. We, all Chinese... they always think that. In Chinese company or Chinese managers they give us a feeling, and they are stricter with work because if the working time start is 8 o'clock, if you come to the office at five minutes past then you may be or you could be punished, so...so sometimes not so good. I think, so Chinese management style is not as good."* (C024)

There will some transitional issues in the coming years, those are unavoidable.

7.3.3.2 Mentors

In Grundfos mentors are meant to guide new employees and give them insights into the organization. Once these basic understandings are achieved there usually is no longer a need for the mentor-mentee relationship. Moreover, the mentor usually becomes part of the mentees network; as an equal. The following excerpt illustrates the above, *"Yeah, I had Grundfos mentor in the beginning. Yeah, still talk to them; it is one of my colleagues. Yeah, but I think now I used the network I have, so ask the relevant people"* (C023).

"It's not so formal. It's more like a network. It's not a very formal mentor. For example your manager does not come and tell you, for example, John Smith is your mentor. No. Normally it's we have lots of discussion with team and maybe sometimes with these persons (names specific people)." (C010)

There seems to be misunderstandings between management and employees about how mentor collaboration works. What the above excerpt describes is the situation of sharing through project work instead of having a formal mentor to count on. However, when HR was asked about this, it was understood that employees are provided formal mentors.

"Here is more like a network. You have problem then you will go to this one." (C010)

There seems to be a need to make mentoring official in order for it to work more consistently. According to a Chinese employee it would be wise to for example, *"ground the system...linking to their performance on the bonus system...would make it more official, in my mind."* (C019).

7.3.3.3 Competency Development

Chinese Engineers are really good at what they studied. They are missing in general soft skills and relationship (network) skills and also the ability to think critically and innovate that according to more experienced Danish Engineers comes from the ability to thinking critically and reflect.

The competences that are necessary in a global context will through experience and time evolve individuals, specifically those that do not naturally possess these competences. It is for this reason that there has been more of a focus on competences in China rather culture. In a practical sense you can do something to change competences but very little to change an individual's culture. And as a middle manager pointed out, *"competences will change the mindset"*. (C021)

Competence Mapping

A Chinese employee encountered working on small projects where there was no competence mapping and together with his team members helped to create competence maps for the project members.

"Actually before we don't have in Grundfos China R&D, but recently we had small projects handled by me with couple of team members. We had to build the template and process for the roles and responsibility. And we have to make a competence profile mapping before we define the responsibility to each people" (C017).

Others have started to focus on personality traits, (although I would rather call these individual attributes) in order to secure the right competencies for different positions. For example, one Chinese employee that works with competence mapping explains, *"The competency came from the personality. [For example], the NPI competences of communication; then you find the person that has that personality. [Another example, networking, the people like to work with new people and like to talk with new people; then this one came from personality."* (C021)

7.3.3.4 Necessary Skill-sets

The following three skill-sets: 1) soft skills, 2) networking skills and 3) reflection skills, are what the emergent data point to as being the most significant for R&D China to improve on collaborating both inside R&D China and in Grundfos China but also in the global scene.

Developing Soft skills

From the data collected it is apparent that in general Chinese employees (there can be exceptions) do not truly understand the need for so much talking, meetings and discussion. However, there are several participants including the following Chinese employee that also suggest the importance of good listening. In the excerpt below, we explore how specifically in virtual communication, it is important to listen. Listening is not just about understanding the words, it is about capturing meaning behind the words.

Technical tools such as Adobe connect and conference calls are used to facilitate working across physical distance. It is most important to, *"listen your customers; listening carefully. You have to understand what they say. This is important. I think listening and learn more carefully."* (C024).

Another soft skill that has been discussed is professionalism. The following excerpt from a Chinese employee reaffirms the need to be professional as it is a good way to gain a good reputation.

*“Also, you need to be very dedicated to your job of course, to show you are professionalism. Because professionalism is **very good name card** for you to interface different culture, because you want to make the work better/good, so I think most people want to do a good job. So, this is a very simple approach to help you to break the barrier with intelligence.” (C015)*

But what is professionalism? If you have not been exposed to or observed this behavior how can you learn it other than through trial and error. There are difficult questions to answer. Perhaps Grundfos needs to consider a set of global selected practices that could be explicitly described...

The last excerpt below regarding developing soft skills is made by a Chinese employee is quite relevant for the situation in R&D China and overall in Grundfos R&D—people development needs to keep up with business development.

“And, another thing is we are, given our leadership team develop the business very quick, but I think we should still spend more- much time into people development. So, if there is gap between the soft skill capability and hard skill capability, if they cannot match, you cannot move the action forward. So, I think this is a very big need for our current line manager.” (C025)

Developing Networking Skills

Much has been discussed already regarding networking and what needs to be done. Therefore, it is quite evident Grundfos needs to develop networking skills, specifically for Chinese employees but it could also be something that others could benefit from. The following excerpt from an Expat illustrates that while some are naturally comfortable networking other are not and a third group I would say, mostly Chinese employees are simply not familiar with this competence.

“Depends on who you are, I think. For me, it is not difficult because I like to make networks across departments, but if you don't like to do that, if you want to work in a box not in a negative way, but if you want to access information in a structured way like a database, I think Grundfos is very difficult.” (C023)

Project Team Meetings & Work Process Develops Reflective Skills

A Project Manager in China recounts Monday morning stand-up project team meetings and the process of his team developing reflective skills as being part of the team and being held accountable as a team. *“When they stand there, okay they said, “Yes” last week. “Due to something, and I didn't finish my tasks but I plan to do in this week” because we need to reflect what we did in last week and also we try to look forward, what we will do in this week. And this kind of initiative will teach each individual how good they are progressing.” (C012)*

This should not be mistaken as the Western approach of motivating teams through team meetings, the Project Manager (who is also Chinese) assures me in our interview that, **“it is a matter of obligation not motivation”**, that drives employees to perform well in this context.

Steps for Good Collaboration; Good Project Success

One of the most informative statements I have collected in this study could very well be the following excerpt, where a Chinese employee very clearly outlines in three steps how we can arrive at good project implementation and collaboration.

*“In my mind, I'm aware that to [achieve] **good project implementation**, you have to go through 3 steps:*

-
1. *The number 1 step is to understand yourself; I call that, you have a very good self-image to know who you are; what your strengths and what your weaknesses.*
 2. *The second step is to understand others, because that's a part of understanding the culture from team background.*
 3. *And the last one is to understand your tasks or your project.*
- Then if you went through this, then you have very good product implementation. So then, I think we can avoid many many different situations” (C011)*

Value of Learning and Innovative thought process vs. C&B¹⁴

There is a gray cloud that looms over employee retention and development and it is the short-term perspective of the Chinese work force. This is primarily brought upon the overall Chinese economy and Chinese job market competition (I will discuss these in the next section in more detail). The following excerpt from a Chinese employee focuses on explaining the above situation and the need for Chinese employees to understand the value of the learning opportunity they are getting vs. the financial compensation.

“Actually, there is a lot of learning opportunity and mostly, I think, it's the professional skills and not only the technical. The technical is very easy to learn. You can learn it yourself, but I think our Denmark colleagues are very good example of the modeling of how the professional style is.

But our young engineers do not see very clear about this. They don't, actually see the value of this. This is very important. Some people are very shy, just like, for example the C&B (compensation and benefits) is very important for them. I can understand this, but yesterday, I tell other guys if you are selected as a [graduate] and you work in organization for 10 years or more, the total of the C&B of the first five or six years, is not very important. However, the learning opportunity is actually very good. But, we need to help people to understand this.” (C025)

Two main reasons for lacking innovative thought processes

When asked their thoughts on the Innovation Intent a Chinese engineer proposed the following two main reasons why there is a lack of focus on innovative thought processes:

Reason 1: *“I think that's a good idea, but we need to include a way to implement this because I think most of our people are not very clear about this and the content and what it means for our future, so we need to highlight this in our daily work.*

Reason 2: *“I think the innovation activity here in Grundfos China R&D is not very key work now because the people are very young and they are not very mature.” (C025)*

This last discussion that is rather an issue for R&D China now and in the future leads to the final discussion under this sub-theme; the following section discusses the Chinese employment market. Throughout this study I have realized that context is indicative of perspective and our perspective, directs us and our behavior, thus I find it relevant to shed light on the context in order to better understand the Chinese employees. Thus with new found knowledge then we are better prepared to find applicable and dynamic solutions.

¹⁴ Compensation and Benefits

7.3.4 Understanding the Chinese Employment Market

How does the Chinese Employment Market affect Grundfos and why should they care? Well, in Grundfos Denmark there are many initiatives that assist the individual to be the best employee they can be. It has been identified in both academia as well as in the business world that satisfied employees are better and more capable employees. While in Denmark the company does not have to consider external effects since Denmark is traditionally a welfare state and the government is there to partially support the individuals should they need assistance. In China the situation is quite different. From the data it is clearly an issue for R&D employees and one of the number one reasons for employees leaving to pursue other opportunities. In order to be close to the company most employees need to relocate to larger cities and this can be a very expensive endeavor. In addition to this, the tasks being performed need to continually develop individual skills, if not they cannot compete in the market place. One Chinese engineer commented that at the time of the study (autumn 2010), *“apartment prices have doubled in the last two years”*...more specifically, *“so young people, if they are going stay in Suzhou, they need high enough salary to survive here.”* Moreover, *“now the rest of the companies [around here], they are trying to get people from Grundfos; they offer much higher salary.”* (C010)

The following three excerpts from employees in China also address the significance of contextual factors.

“But we have a pre-set form for people and the pay should be based on the qualification and the competence. So, some people complain, not still satisfied with standard. But for another hand, their competency is not so good that we can't pay the best salary.” (C019)

“But we, still, we are the brand company in the industry, in the market. So, for the late comer and for the smaller company, they want to just get the people from us.” (C001)

“I think to be frank, the current employee in China if we go back and see the young generation here in China has a lot problems, for example, food and housing price is hiking. So actually it is very important if they are going to get married they will need amount of money so they can pay the mortgage of a house otherwise they will need to go ahead and get an apartment or something. If you do not build the trust or comfort environment or culture or something to concentrate on people then the people will just base it on what kind of salary you give and if it's not high enough they will just look for another one... . This is very normal in China.” (C002)

HR has standardized the pay structure. However, the question needs to be asked if this is competitive enough for the market if other international companies in the area are scouting Chinese employees that want more salary. Is it worth it for Grundfos to invest other resources on employees that will later on be scouted or is it perhaps more logical to invest from the start? I am not here to arrive at what the right decision for this situation would be. I can however, infer from the data and additional observations that there is a true disconnect between the perceptions of the needs of the employees between what the employees believe and what management thinks; this is never a good place to be for a new and fast-paced growing organization.

Work as a Status Symbol

There is a distinction in Chinese society with the value or status a position works as an identifier of the individual. Status is significant in China, as more than likely status equates with your salary. The following Danish expat clarifies exactly how significant the differences can be for the Chinese

employees compared to in Denmark.

*“And also I think **culturally there is an issue here that is less prestigious to go down to the lab to have dirty hands.** I think so. You can see there is a big gap between the people down on the floor even though factory floor looks more or less the same as a Factory floor in Denmark But the people here the salary difference between the guys here and the guys down there. It is maybe a factor of 5 to 10. In Denmark it is maybe a factor of 2 to 3, if you are lucky maybe even less. And then you have the managers and this gaps between managers and engineers maybe multiply by 4 or 5 again. So you can see there is a big spread in the wages you get. This is a lot related to the prestige and that is also why a lot of Chinese think that they want to be managers. I have not had that many discussions recently but in the beginning I discussed it often with colleagues. They are fresh from school and two years afterwards I want to be a manager. That is the ambition. But that ambition is very much connected to manager positions, they think gives more money.” (C029)*

Not everyone can be a manager- different career paths

While it is important to acknowledge the challenges it is also important as an Expats shares in the following excerpt that they need to show Chinese employees that there are other options than being a manager.

*“They can **mirror themselves** also because you know we have different understanding of what is a senior engineer, how can you become that. It's not just that you've been in the company for five years and you get a title of senior. Grundfos does not work like that. And then they can see well there are some seniors and you really know they are seniors because they really are competent and have a lot of knowledge or you have a chief engineer. **It's good for them to see the difference** and also to know that there are these kind of different career path that they don't need to be managers, all of them. They can still have a lot of respect and good high salary without that for example” (C027).*

7.4 Communication

In theme 1: culture, I identified communication as one of the two top differences between Danes and Chinese employees. In theme 2: networks, I established how networks and building relationships the Grundfos way, is not an easy concept for Chinese employees to comprehend. Under theme 3: the individual and their interactions, I identified key aspects skill sets that are worth developing, e.g., soft skills, networking skills, and reflection skills as these will improve employee understanding of the why we need to build relationships and grow their individual network. The fourth theme uncovered from the data is communication. Communication has been a topic that has been part of the previous three themes already discussed. Here we take a more focused look at the data and discuss emergent concepts. Again I have organized the revelations into four sub-themes: 1) intra-organizational stakeholder management, 2) heart in communication and 3) virtual communication and 4) communication and language.

Figure 42- R&D China: Communication theme - presentation of sub-themes & their underlying topics



7.4.1 Stakeholder Management

Stakeholder management in theory is simply the organizing and maintenance of interested persons, in practice it is a messy thing. In Grundfos R&D there is an intense intra-organizational network of internal stakeholders that affect the way individuals work and interact. The following excerpts are specific examples, of a Chinese project manager and resonates the importance of this aspect of communication. As a project manager there are many individuals that you need to know, understand and be able to **influence** to get them excited about your project.

This first excerpt is even more unique since it comes from asking: What are the some of the barriers for success for Grundfos? The Chinese engineer immediately replied, “**Communication**. *I think stakeholder management is a very big challenge for me to get success in the Grundfos and for the stakeholder management, the most important is the communication.*” (C017)

From my outsider/insider perspective, I find that while communication is important it is only part of the picture. Building relationships, understanding the individual, the Chinese context and culture in both abstract and practical applications are other aspects of the entire picture that should be taken into consideration. The following excerpt adds to the above discussion by illustrating the interesting reality that project managers and overall all R&D employees have to deal with and that is of having to take up the role of a lobbyist, making sure you have people on your side and they are willing to support you. In order to continue these relationships, you need to communicate effectively but you also have to be successful, so that you have a track record that people can place their trust on.

*“For the project manager, you have to figure out what's the different phase of the project—who are the key stakeholder for you, what's their interest and how to get this from out of the project to get them satisfied--so, this quite important and also how to **get their interest** for the project and to make them become **more a contributor to the project**. And this is also the task of the project manager. **We have to get different ways of the communication to make them get interested.**” (C017)*

7.4.2 Using your Heart in Communication

The following excerpt shocked me because the business literature would generally scoff at such a thought. This excerpt originates in an interview with a Chinese employee when we are discussing

face-to-face communication. They had mentioned that they preferred it to other approaches of communication. I probed into this and asked, "What is it about meeting the person face-to-face that changes the relationship, for you?". The following was their reply:

*"I think communication is very important but the effectiveness of communication does not only depend on the approach you are using, maybe email, phone call and also face-to-face. This approach, face-to-face is of course the best one. But the causing is not the approach, the causing I think is how your attitude to communication. **Because the effectiveness of communication is, basically depends on how you treat the people.** Have you treated people very honestly, very frankly also very friendly with respect and the most you are focused to develop to make those things better, to achieve the best project performance or something else...to let people understand we are doing a good thing is very important. And also you should truly respect and very open for the communication, **use your heart**, show a very open mind. That's a causing for communication."* (C015)

Using your heart in communication is real and used in practice. Here the Chinese engineer suggests that communication is about one's attitude, about how we treat others. It is about the focus on making your work better and by definition here through effective communication you build relationships based on being genuine and using respect to communicate.

7.4.3 Virtual Communication

As it was mentioned above to many face-to-face communication is the preferred communication. However, in a multi-national setting it is simply not possible to meet face-to-face as much as we would like to. This causes communication issues. Many have expressed their thoughts on the issue. Below I will highlight two of the most prominent aspects: 1) the tangibility of face-to-face and 2) virtual communication and culture.

The Tangibility of Face-to-Face

The following excerpt is from a Chinese employee, here they acknowledge their needs but also the options, such as video conferencing that while not as good as real face-to-face meetings helps to facilitate communication.

"I don't think the telephone is good communication tool because you must face to face to feel the feeling. So, I think, if there is some chance to meet together, it is the best for me and the other is conference, a video conference meeting is another good way because you can see." (C018)

Virtual Communication and Culture

Advances in technology now permit us to be able to see, talk and even share documents on our computers. Notwithstanding there are some limitations when the underlying assumptions vary for many different reasons. These variances can be as slight as regional ones across the US or expansive such as the differences between regional in China or across nations such as Denmark and China or Western and Eastern Cultures. Interestingly enough the data points to the reduction of the 'culture noise' through the use of occasional F2F meetings that improve communication and reduce some of the awkwardness of virtual communication that is attributed to cultural misunderstandings.

"I think because the relationship's already built, I think it is just like having a meeting here or there. I think it's a very, very good tool and we use it quite often actually." (C027)

Being able to see one another provides clues into reactions for what is being communicated.

7.4.4 Communication & Language

The third and given the context of R&D China, the most important and tangible aspect of improving communication would be a focus on language. One of the most important and definable aspects of communication is language. In the context of an organization, communication becomes even more important for the success of achieving goals because time and other factors as the success and failure of the initiatives is intensified. We need to speak the same language and understand the same meanings in the chosen language as this is the basis for communication.

Here are some of the most prominent excerpts from the data about the importance of using one common language:

- *“Essential that everyone can communicate in English because that is our global setup”* (C027)
- *“...Global talent communication skills need to be very sharp; very efficient and effective in communication. So language is really an issue.”* (C026)
- *All written communication from Grundfos Denmark should be in English*
- *“...if they can not communicate actually that’s enough to say that we can not hire them.”* (C027)
 - *We can not hire candidates that can not speak fluently. Knowing English is not enough to work at R&D China. Communication and understanding is a vital role of the job.*

Writing in English is Necessary

In the following excerpt an Expat reveals the difficulties they faced when they first worked in China.

“One of the first projects that I was part of when I came here, now it has stopped and moved to Denmark again, in that project some of the documentation that we need was so difficult to understand. But here when you read ten lines of text you were in doubt what do they mean. That is not very good. You cannot base decisions on that. At least that is our ambitions—that we at least have to write at an English level that is understandable and you don't get the wrong interpretation.” (C029)

Email Communication- Written in Danish

Imagine you are Danish employee and in the middle of a busy day, you are answering your emails and it happens that perhaps after 20 emails, you begin to reply in Danish, not thinking of how or where this email is going to end up. An Expat says, *“It is not necessarily that there are bad intentions... They just don't think about it.”* (C029)

But it is irritating and time consuming for others down the line that will either have to ask the original sender to translate it or it ends up being a job for managers and/or expats in China.

“It irritates me a little bit if people know that other Chinese employees are going to be in the mails. Then it irritates me if they write in Danish. They should not do that. Maybe I ask them to rephrase it otherwise I have to translate it.” (C029)

Email Communication-waiting

There is another aspect to this example, if the Danish employee would have replied to the original employee it would have helped the Chinese employee understand what was happening and not left wondering. This is not a cultural issue, this is just common courtesy and anyone left dangling for a reply of an email sent is left wondering what happened. Perhaps initiating an organization wide method of replying to emails would be helpful towards creating common work process that eliminates the guess work. As illustrated by another Chinese employee this is not uncommon to have to wait and wonder what is going on in Denmark, *“But people in Denmark just keep silent and I'm frustrated on what's going on because I cannot go there and face the people face-to-face to figure out. I have to do more active in doing my job. In my way, I think, to call him directly is my last step because I believe it shows, that I think he's not doing his job and I have to call him. Otherwise, I think e-mail or just normal ways is good. I try to avoid pushing people too hard.”* (C016).

7.4.4.1 Current Situation at R&D China – Language

The following section will address the language situation at R&D China at the time of this study (Oct-Nov 2010) with regards to what is currently happening and what initiatives are in place to facilitate the improvement of communication through improving language skills and lastly, a Chinese employee's opinion about the current initiatives.

Currently, Chinese employees speak Chinese to each other and Expats speak Danish to one another. In meetings, English is used as the official company language. There are two initiatives established by management: 1) English Fridays and 2) Private lessons with English teacher.

English Fridays at GPC R&D

Every Friday we are not allowed to speak any other language in our office than English and we have penalty if we do so. Well---I think, and it's one Yuan for Chinese and ten for the foreign people ...” (C027)

English Teacher & Classes

“We are doing a new initiative in that area where we are trying to... we have actually had all of our employees tested this year. According to an Oxford test you can do online to give placement. And based on this test we are going to have classes for employees divided into different groups divided into groups based on their skills. I think it is below 60 on that scale.

Then there are those that are above that. they are quite ok. And there we are trying to do it more individually where it is more on a one to one basis. and also do it through the projects where they have to do written documentation that is going outside this office.

We have engaged an English guy that has engineering background that has lived out here for a long time and so now I think he is a little bit retired.... We have made this arrangement with him that he will establish this teaching classes and handle this with the communication (editing) that we get a more professional way of communicating in English. Because it can be a big issue. (C029)

Opinion of a Chinese manager on the need to focus on English

“I think that their language skills are not enough for both career development or they are just like daily work. You know, Chinese people are maybe not very open and they are very afraid of make some mistake in grammar or pronunciation and they feel, maybe it's a kind of a shame so it's a kind of obstacle to use English.

*Although every Friday, we have English day, but you'll see that **Friday is very quiet** (LAUGHS). So, I think we need to use some other way to promote our people to learn English. Another thing is that **they don't think it is very urgent need or a great help today at work**. They think, "If I can write something you understand, it's just okay". So, they don't spend time. Even we have now have the English class, I don't think it works because, English, you need a lot of time by yourself to study. You need to read a lot and not a technical documentation only, add literary, fiction, listen to movie." (C025)*

While the initiatives are both positive steps to improve communication, the above excerpt from a Chinese employee also identifies the weaknesses with such initiatives. Specifically, when they state that Chinese employees just "don't think it is very urgent... or a great help" for their work. This is a bit shocking to me that the urgency and need is not communicated.

7.5 Leadership & Management

The fifth theme identified in the China R&D Case concentrates primarily on leadership and management. I have identified three underlying sub-themes presented below:

Figure 43- R&D China: Leadership & Management theme - presentation of sub-themes & their underlying topics



7.5.1 Managing R&D China- The Grundfos way

Integrating Grundfos into R&D China- not just outsourcing

Given that China is such an integral aspect of Grundfos' future ambitions it is important to consider how R&D China is managed. The following excerpt is from an Expat where they discuss how other foreign companies choose to manage their Chinese organizations. While the Expat admits that it would be easier to do the same Grundfos does not want to have outsourced work to China, they want China to be part of the Grundfos family. I could sense the individual's conviction throughout this discussion, this is something this person truly believed is necessary to achieve success.

"Because when I see or talk with other foreign companies that put their R&D out here they tend to put a foreign manager and run in the Chinese way because it is easier to get faster results from it.

But this way we are talking about it. When we start to talk about innovation, projects and team spirit that other companies in China they simply don't try to force it like we do. But we

believe that is what is needed to develop real products that are different than the competitors in China. We need to get that out of the Chinese employees. They have it like we have it.” (C028)

7.5.2 Decision-making and the Invisible Leader

The following excerpt from an Expat discussed the frustrations overall in Grundfos with stakeholders and decision-making. I have touched about the issue with stakeholder management under theme four: Communication, there, a Chinese employee discussed how much work it is to have to influence and manage so many people for a long time, not just short term. Here we explore the decision-making process and how it seems that no one actually takes the leadership role and makes decisions—what I call the invisible leader.

*“I think in Grundfos, a lot of people are frustrated about how decisions are made, how many stakeholders you need to manage in order to have a solid decision, a final decision, because it is, how to say, it's bottom up to make the foundation for the decision but at the end of the day, it's who know who. I guess some of it is inevitable but **I think a lot of people are missing someone on a direct level setting, really setting out directions saying this is the way to go.** Now, you're the team, you find out, how we get there but this is definitely the direction we want.” (C023)*

The basis for network relationships to develop is collaboration, a need for one another and a desire to work together to make synergies by combining each other's strengths. Grundfos aspires to be a global innovative organization. However, the above is a perfect example of why I have set focus on the individual and their interactions. It is the individual's job to realize that they are dependent on one another. Perhaps not on specific tasks of their everyday work. However, in many respects, their work is based on working together in teams, projects, across different functions and departments. It is their dependence on each other that promotes an environment where new concepts and knowledge is able to manifest itself.

Decision-makers are missing

The following excerpt is from a discussion about R&D China and their collaboration with Grundfos Denmark. The importance and according to this Expat, would be decision-makers are not available.

“That is what we see, the starting point of development projects is really frustrating out here. because in DK it is also frustrating because no one knows what to do. Someone asks do a new pumps but nobody knows what exactly it should be able to do. Some business guys they want it to be very fancy but at the same time it should be very cheap. So there is a lot of mixed ambitions in the start to get the project formed and shaped. Ok this is really what we want. That is also frustrating in Denmark but out here is even more frustrating. People (Chinese) they really don't like that because it is not really real work just a lot of talk. It is not getting to the task.” (C029)

7.5.3 Management as Role Models

The following excerpt from a Chinese project manager discusses the importance for management to work as a role model for the young organization in R&D China.

“It is a role and responsibility for the whole department, especially for the management team. A single vision and ambition and enthusiasm are important for the management team.

They should have a good, very long term vision to develop with the whole organization, to align with Grundfos value and also the strategy from the top management and to put those values from the top management into the real operation. I think Grundfos already defined a very beautiful strategy, you know beautiful value, but how to let very junior staff engineer, just recently college graduate people and letting them feel the culture. [It] is not as [easy for them to] see what we see, they see just what we do to feel what the real culture is. [Therefore] management [needs] to be a role model; [it] is very important to help the organization develop well.” (C015).

7.6 Creating Common Ground

The final emergent and telling theme in R&D China is: creating common ground. In order to make it more condensed, I have organized the underlying data into the following underlying sub-themes:

Figure 44- R&D China: Creating Common Ground theme - presentation of sub-themes & their underlying topics



Through the time spent in R&D China, there was a lot discussion on how they can create a common ground, I thought it would be fitting to conclude the analysis of R&D China with this theme. Some of the underlying sub-themes I have addressed elsewhere and are only presented here as part of the whole picture for creating common ground.

7.6.1 Engineer Education in China & Denmark

The Engineering educations in China and Denmark have extreme fundamental differences and this is where the major misunderstandings (aside from cultural) arise from. Please see theme 1: Culture and section 7.1.2.3 covering the Main Differences: Chinese and Danish.

7.6.2 Facilitating Integration through Themes

During the financial crisis in 2008 the R&D unit had a hiring freeze and with a stop on expending resources it was necessary for management to continue to develop their people. Making linkages to the strategy, vision of R&D China as well as that of Grundfos, common themes were developed and used in order to influence employees, develop competencies and create common ground. Some of the themes were, “*more out of less*”, “*the customer’s voice*”. In 2010 the themes was “*professionalism*”. (C028)

7.6.3 Global Management Tours

In order to better understand the context of any given situation it is better, if possible, to live through it yourself. This way, managers in Grundfos can understand from a more hands-on approach how the situation can be best managed. One expat exemplifies this thinking when they state, “...*Management should have posts around the world.*” (C028)

7.6.4 Multi-tasking in New Organizations

Not only are middle managers tasked with providing employees with much needed professional skills as well as the usual technical knowledge sharing they are also sharing previous work experience across the board; lending a hand anywhere it may be useful to provide assistance so as to succeed in their unified goals.

“My responsibilities are primarily two. One is the major thing, is the people development, develop their professional skill and competency and knowledge,

and also provide some technical consultant for the project because our project manager, their knowledge maybe limited only in that one area, but for the whole product, they have electrical part and mechanical part, and hydraulic part, so for the electrical part, I will do some proposal including estimation of the scope and workload, and how difficult it is; although we are encouraging our people to demonstrate the competency to meet the requirement of the project.” (C025)

7.6.5 R&D China Competencies—Misrepresented in Denmark

There is a very real issue of mismatched understandings of what can be done in China. The following excerpts all from Expats highlight the issue:

“But that is where I sometimes feel that there is a missing link between what is communicated in Denmark and what is really going on out here. Yes, we are building this office, yes there is a lot of skilled Chinese workforce, if you sit them in front of the screen and make them work with something they have studied wow what they can do inside of an excel sheet and fluid dynamics. It is amazing what they can do. But when they have this result then things stops and the whole idea of teamwork and projects. You really have to spend a long time searching for those key people. It is not a natural resource. There is a big misalignment about what they believe Chinese workers can and what they actually can do.

The people in Denmark that really want this they really miscommunicate what this office can do. They communicate it as high level stuff and be afraid here in Denmark, just send it to China and they can do it. No! They cannot. They are very very skilled on hardcore technical stuff.” (C028)

High Expectations for China

The following excerpts are from two Expats that share frustrations about the high and unrealistic expectations for China.

“Just because it is China, everyone kind of thinks that you can execute projects in the half time with less specifications and okay they accept maybe a little bit lower output but only on the performance so not on the really difficult core competences to maintain the exact functions specified and high quality...” (C023)

This Expat reaffirms below that there is great potential but that a lot of work has to be done. In Denmark, they seem to have an 'out of sight, out of mind' mentality about China and think, someone will take care of it. But as we have seen in the R&D Denmark data presentation, one manager explains, Globalization is everyone's problem not just outside of Denmark.

"It is growing extremely fast. I believe, like everyone else, there is a huge potential, but I guess it's still a potential since everyone is very new. Also a lot of the colleagues are also without many years of experience. Normally [in Denmark] the networks I work in, I am the new one with no experience and so operating in an R&D department [in China] with almost only new people I think it is interesting but I also see that the current stated value is over estimated." (C023)

"Because people in Denmark have an impression that everything is cheaper in China. And yes, you can get cheap engineers but then you get cheap results. And of course you can get clever engineers but they also cost money. And if I should be a little bit harsh then even those people we have, some are quite skilled. But it is only 2 or 3 that has the level that is comparable to that which we have in Denmark. And that is even fresh colleagues. So there is a long way to go. And people (in Denmark) they have an imagination that China is this land with milk and honey where you can just get employees that are just coming to you." (C029)

7.7 Summary of R&D Unit- Practical Considerations

Grundfos R&D China is a relatively new organization and it has a lot of demands it needs to meet from many different stakeholders. All these different stakeholders have their own understandings of R&D China's present and future, which can quickly lead to much confusion. The individuals that make up R&D China do however, seem to have an understanding of what they are as a unit and what their tasks and motivations should be.

The significant revelations from the emergent data collected in R&D China point to some rather revealing concepts:

1. Culture while a very real concept is focused around the individual person and context and much less around whole groups of people as this can 1) lead to misunderstanding and 2) is too general to make sense of the complexity present in an entire culture.
2. China and its economic development affect many aspects of how we view China, Chinese job market, Chinese employees and this includes how Chinese employees relate to the expectations and requirements foreign companies place on them.
3. Grundfos culture (a networking culture) is not explicit and needs to be further identified and explicated to align with the global trajectory of the Grundfos Group. It will better equip non-Danes and perhaps also Danes of how to be most successful in such an autonomous organization.
4. Impact and Effects of Perception—in other words, how we choose to understand both people and the environment around us has a great impact on how we thus interact with said people and environment.
5. Network relationships should be built with a different mindset; the focus needs to be on long-term collaboration, of reciprocity rather than lobbying for the current project.

PART III- LITERATURE REVIEWS

Part III is focused on exploring the literature to make sense of the emergent data presented in Part II. The following four chapters concentrate on the context of internationalization of R&D Activities as well as the three main components of collaboration process of knowledge networks—culture in organizations, networks and individuals and their interactions. Part IV will combine the above preliminary analysis presented above together with the literature review to further develop key concepts.

CHAPTER 8- Literature Review—Internationalization of R&D Activities

8 R&D Focus

The study of R&D activities of large multinational organizations is a complex context to embark on researching; there are many avenues that can be explored. This section will define R&D and discuss the main characteristics of R&D. Moreover, this section will review the literature on 1) internationalization of R&D activities and 2) the current trends in R&D management. Lastly based on these first two discussions I will present a new perspective on R&D and explore what I believe to be the fundamental aspects that emphasize the context of this study.

8.1 What is R&D?

R&D Defined

According to the literature there is no universal definition for research and development (R&D). Still through application and study of R&D in other fields we can agree to a certain extent on what R&D implies. R&D is the creation of new knowledge and tends to be discussed in a business context where the end goal is the development/creation of technological solutions. The concept of R&D is in itself a combination of two distinct and yet inter-related activities. The R stands for research where the focus is more on conceptualizing and testing ideas and therefore has a more long-term perspective, while the D is geared more towards development and adaptations of already existing concepts and has a more short-term perspective. While R and D have been separated in the literature, for example, Zedtwitz and Gassmann (2002) create a model for better understanding the drivers for R&D that is Research-focused and for R&D that is Development-focused (this model creates four archetypes of R&D internationalization: National Treasure, Technology-driven, Market-driven and Global); generally these two activities are not separated. This study's focus is more on overall R&D process improvement and therefore, I will retain the traditional unified understanding of R&D.

The Characteristics of R&D

According to Sørensen (20010:3) there are five distinct characteristics of R&D:

1. *An intangible resource and competence used by knowledge workers to generate new value*

The actual work of R&D—the tacit knowledge that includes previous expertise, knowledge and the ability to construct, synthesize and develop new ideas—is “embedded in the knowledge worker”; making the individual an integral part of the process.

2. *Non-repetitious in nature*

While there are standardized processes the nature of R&D is exploratory and this means that there is plenty of variety in how the concepts are developed. Sørensen contrasts this to the repetitive nature of production work.

3. *High degree of complexity and uncertainty*

R&D work process is conceptual and there is no guarantee of anything concrete until the end of a very long process of development is completed. This makes for a high stress environment where many pieces have to fit together in order for project completion. Moreover, here we can address the change and need for specialists. Project teams, networks both formal and informal, committees, and various levels of organizational matrix structures need to work together; this will of course heighten the complexity and uncertainty.

4. Both explorative and exploitative in nature

The realization that there exists opportunities for competitive advantage in using R&D as an upstream process of internationalization. Having a presence in local markets and expanding the presence into local technological networks such as universities provides organizations with the opportunity to create market-focused developments, thus exploiting the market for opportunities instead of only developing from concept.

5. A cost incurring support activity of increasingly strategic importance

There could be much anxiety in explorative R&D since we do not know when it will pay off, therefore Sørensen suggests that focusing and linking R&D to strategies creates a focused that supersedes just R&D for curiosities' sake.

8.2 Brief Review of R&D

R&D is internationalizing and this has been an unexpected side effect of the internationalization and globalization of business. Traditionally MNC's have held on very tightly to their centers of innovation, also known as their research and development activities (R&D). This has been the norm for two main reasons, firstly, considered core to their competitive advantage companies have been prone to keep it in house. Secondly, issues with the copyrighting of intellectual property and the subsequent difficulty in compensation in international judicial proceedings were not worth the risk. According to the European Commission's 2008 CREST Report on Internationalization of R&D Facing the Challenge of Globalization: Approaches to a Proactive International Policy in Science and Technology (S&T), the following four points are key drivers for the internationalization of R&D activities.

- to strengthen research excellence and innovation performance by a better access to foreign sources of knowledge and by increased global cooperation between research organizations and innovation networks to jointly develop and exploit new knowledge and technologies based upon comparative factor advantages (in terms of knowledge and technologies);
- to increase the attractiveness of Europe on the worldwide R&D market, to successfully compete for R&D contracts and services and to attract more foreign investments in R&D as well as the best and most creative 'brains';
- to prepare the domestic ground for successful European innovations abroad;
- to respond to global problems, international commitments and to foster the role of the EU as a community of values.

This study focuses on Grundfos Research and Development (R&D). By specifically focusing on the R&D activities of MNC's it is the aim that this context with its extreme focus on intangible information and knowledge will lend for an insightful study environment. Traditionally MNC's have maintained their R&D units centralized at headquarters; this was mainly due to the demand-focus

and the risk. The demand of having international R&D was not as high as it is today; internationalizing sales and production facilities was enough. Additionally, the risk of having knowledge copied/stolen was too high. If there was a change to R&D configurations it was mostly a result of “mergers, acquisitions and manufacturing-location decisions” (Boutellier et al 2008:712) (see also Krugman and Obstfeld (1994) for a more in depth discussion of the factors driving the internationalization of R&D). “Historically, the internationalization of companies started with the opportunistic development of international sales” (Boutellier 2008:4). Proximity to the local market has given sales and marketing teams the essential knowledge to better anticipate how to deliver on the needs of the market. It is also beneficial to have engineers in the local markets where they can identify needs given their expert knowledge. In addition, R&D units can also set up local external networks where they can gain insights from local institutions such as universities; being able to see the world through the eyes of the specific society. R&D has evolved and practitioners as well as researchers alike have witnessed an evolution from the above explanation of R&D towards a more interactive, collaborative and human-focused one; as Boutellier et al (2008:712) cites Simon (1997:238), “more and more of the human work becomes work of thought and communication”. Before we continue on this discussion I review the literature for conceptualizing international R&D processes below. While there are other typologies that can also be discussed I am limiting the discussion to Boutellier et al (2008) as their review is extensive, in depth, and most up-to-date; therefore, it serves as an accurate and representative guide for reviewing the literature on the internationalization of R&D activities.

Boutellier et al (2008:79-96) review the literature for organizational trends in R&D and arrives at with five ideal forms (ethnocentric centralized R&D, geocentric centralized R&D, polycentric decentralized R&D, R&D Hub model and integrated R&D Network) of international R&D organization (for a detailed explanation see Boutellier et al 2008:79-96). The table below highlights the main characteristics of the five forms. “The ethnocentric configuration becomes inappropriate when a company becomes more dependent on foreign markets and local competencies” (Boutellier et al 2008:81). Geocentric centralized R&D is the next step but requires “appropriate investments in training and recruiting R&D personnel to increase international awareness” (p.81). Job rotation improves international awareness for expatriates of the home country as well as facilitates learning by doing and sharing of organizational cultural norms for foreign colleagues. While the geocentric centralized R&D “offers a simple way” to internationalize while retaining the advantage of centrality it is critical for headquarter employees to have a change in perspective regarding the inter-relational context with their foreign colleagues. As Boutellier et al (2008:83) suggest there needs to be “a reorientation of values and behavior of home-based R&D personnel”. They suggest “change agents” what I call facilitators, those that have intercultural experience and knowledge, “are needed to push for international orientation of all employees”. Boutellier et al (2008:84) consider the polycentric decentralized R&D a “dying model”, where redundancy increases costs and maverick-like behavior works against overall organizational strategies. This form gives way to the “hub model or network-like structures of organization” as the organization needs to reclaim order and bring focus back to the individual units. The hub model is focused on integration through central control. According to Boutellier et al (2008:87) the advantages “rest in the quick recognition of local demands and the sustaining integration of global R&D input”. On the other hand, the increase of coordination costs and time spent can be seen as disadvantages. Moreover, the prioritization of the global good over

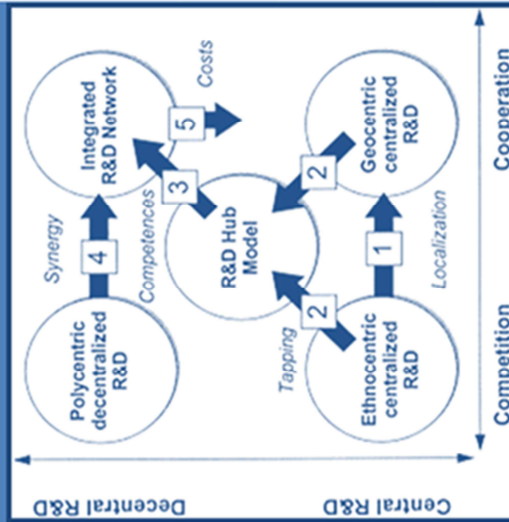
the local gain can seem as Boutellier et al (2008) put it “suppressing creativity, initiative and flexibility” in the R&D units by the central directives (otherwise known as management/HQs). In the fifth and final ideal form domestic or HQ R&D is no longer controlling R&D, instead it becomes “one among many interdependent R&D units which are closely interconnected by means of flexible and varied coordination mechanism” (Boutellier 2008:88). Here the focus is on developing competence centers where all contribute to one united vision. These five forms are as they state ideal forms and are not meant as hard, unwavering definitions of what exists. Through the process of internationalizing R&D organizations can vacillate between several of these forms and this undoubtedly creates problems for the individuals working in this context.

According to Boutellier et al (2008:91) two principles are vital for the success of R&D Network: 1) subsidiarity and 2) moving centers of gravity. Subsidiarity is “the principle that defines the relationship between one R&D center and the other centers: Whatever can be managed by the decentralized units is not taken care of in the center. The center of gravity is allowed to move from projects and core capabilities: Whoever knows best, take over the lead” (p. 91).

Boutellier et al (2008:92-93) realized that there was a need to explore a combination of typologies to truly understand the changes happening within the internationalization of R&D activities. The table below summarizes their research as they explored, “combining the work of Barlett (1986) regarding MNCs and the work of Perlmutter (1969) concerning basic behavioral patterns of MNCs” (see also Gassmann & von Zedtwitz 1999:245) and the result was a combination of the five principle trends as well as five ideal forms of organizing international R&D presented in the table 13.

Table 12- Five Principle Trends for Organizing International R&D

Trends		Explanation
1	External Orientation	Greater awareness and realization that alignment to local market needs can produce better results
2	Establishing listening posts	Putting people out around the world where they become links to new knowledge and technological expertise provides the company an important source of know-how
3	Empowerment of Foreign R&D	Releasing tight controls and assigning a strategic role increases competencies, expertise and network relationships
4	Integration of decentralized R&D sites	Organizing R&D to reduce redundancy and exploit opportunities for competence centers that share knowledge and collaborate on global or multi-site projects
5	Re-centralization	Better opportunity to exploit scale effects and to improve the coordination of worldwide dispersed R&D activities by reducing the amount of parallel R&D and intensifying network-internal cross-border technology transfer



Source: adapted from the text of Boutellier et al (2008:92-93)

Table 13- Five ideal forms of international R&D organization

Configuration	Organizational Structure	Behavioral Orientation	Strengths	Weaknesses
Ethnocentric centralized R&D	Centralized R&D	<ul style="list-style-type: none"> National inward orientation Protection of core technology Homogenous R&D Culture 	<ul style="list-style-type: none"> High efficiency Low R&D costs Short cycle times Protected core technologies 	<ul style="list-style-type: none"> Lack of sensitivity to local markets Danger of missing external technology NIH syndrome Tendency towards rigid organization
Geocentric centralized R&D	Centralized R&D	<ul style="list-style-type: none"> Int'l external orientation Close cooperation with other sites Unrestricted information flow Change agents enable internationalization 	<ul style="list-style-type: none"> Efficiency due to centralization High sensitivity for local markets & technological trends Cost-efficient R&S internationalization 	<ul style="list-style-type: none"> Danger to neglect systematic internationalization Local content restrictions & local market specifications insufficiently considered
Polycentric decentralized R&D	Highly dispersed R&D, weak center	<ul style="list-style-type: none"> Competition among independent R&D units Little coordination between R&D units Customization before standardization Local effectiveness before global efficiency 	<ul style="list-style-type: none"> Strong sensitivity to local markets Adaptation to local environment Usage of local resources 	<ul style="list-style-type: none"> Inefficiency & parallel development No technological focus Problems with critical mass
R&D hub model	Dispersed R&D, strong center	<ul style="list-style-type: none"> Supportive role of foreign R&D Units R&D center has technology lead Global coordination of R&D direction & budget 	<ul style="list-style-type: none"> High efficiency due to coordination of R&D Avoidance of redundant R&D Exploitation of all available strengths Realization of synergies 	<ul style="list-style-type: none"> High coordination costs (time) Danger of oppressing creativity & flexibility through central directives
Integrated R&D Network	Highly dispersed R&D, several competence centers	<ul style="list-style-type: none"> Synergistic integration of int'l R&D units Partnership among all competence centers Unrestricted flow of information 	<ul style="list-style-type: none"> Coupling of specialization & synergy effects Global before local efficiency Organizational learning across many locations Exploitation & refining of local strengths 	<ul style="list-style-type: none"> High coordination costs (time) Complexity of institutional rules & decision processes

Source: adapted from Boutellier, Gassmann and von Zedtwitz (2008:79-96)

8.3 R&D units and Headquarter Relations

Sørensen's (2010:9) research alludes to the complexity of the relationship between R&D units and the Headquarters. This is due to the ambiguity experienced with regards to what structures and organization is being used to enable work processes to function smoothly. There are obvious reasons why the foreign R&D unit will want certain things to function in a particular way and headquarters will also have their reasons for wanting things to transpire in their own particular way.

These relationships and the roles that are used to identify how to work together depend on the perspective of decentralization vs. centralization that we discussed earlier. If, for example, foreign R&D units are told they are equal and part of an R&D network but treated as an affiliate that needs to acquiesce to headquarter demands it can be difficult to create a trusting environment.

8.4 What are the Key Aspects/Fundamentals of R&D

What does that mean for the internationalization of R&D and its management?

One of the most important issues MNC's need to focus, with regards to internationalization of R&D and its management, is on how to identify, organize and spread the knowledge throughout the organization. Halal and Taylor (1998) coined the term 'knowledge economy', where the individual knowledge and services became more prevalent than manufacturing. Today this concept has evolved to what is now being called 'Human capital organizations', the learning organization, etc. In the R&D literature, Boutellier et al (2008:287) also identify knowledge to be vital; they state it as such, and "some knowledge management patterns are emerging. The most important one is certainly the notion that knowledge creation is completely dependent on individuals, on human beings". They go on to state, "people are the primary source of innovation in high-performance organizations" (p.287). Putting the individual in focus in this way also signifies the importance of their interactions with others. Boutellier et al (2008) also point out the importance of informal networks and state that they are capable of greatly reducing "the need to directly control information flow and know-how maintenance" (p.287). The emphasis on the individual's integral place in the puzzle of international R&D leads us to focus on softer factors such as mutual trust, face-to-face contact, and relationship building that are more difficult to manage. Obviously this also brings the culture factor in the fore. While we should not blame everything on cultural differences it is important to understand as Boutellier et al (2008:288) state, "cultural differences must not be equalized [either] - each project member will bring in a personal hue and thus redefine team interaction. Project leaders and R&D managers must develop individual strengths and advantages while adjusting intercultural differences". While there is much uncertainty about how to truly internationalize R&D much of the research agrees and Boutellier et al (2008:748) conclude their book, *Managing Global Innovation*, with these words, "[even when] looking ten years ahead, regardless of the rapid evolution of modern technologies, new organizational concepts and even more efficient tools, the individual and teams will remain at the core of international management of innovation". Along the same lines, Tidd and Bessant (2009:281) start of the chapter on innovation networks by pointing out that no man is an island, that in "reality taking any good idea forward relies on all sorts of inputs from different people and perspectives". In the brief review of the R&D internationalization literature above it becomes clear that individuals and their interactions are vital

for the success of R&D. Tidd and Bessant (2009:283) identify four major arguments that emphasize the need for networking:

1. *Collective efficiency*- in complex environment requiring a high variety of responses it is hard for all but the largest firm to hold these competencies in-house. Networking offers a way of getting access to different resources through a shared exchange process—the kind of theme underlying the cluster model, which has proved so successful for small firms in Italy, Spain and many other countries.
2. *Collective learning*- networking offers not only the opportunity to share scarce or expensive resources; it can also facilitate a shared learning process in which partners exchange experiences, challenge models and practices, bring new insights and ideas and support shared experimentation. ‘Learning networks’ have proved successful vehicles in industrial development in a variety of cases.
3. *Collective risk taking*- building on the idea of collective activity networking also permits higher levels of risk to be considered than any single participant might be prepared to undertake. This is the rationale behind many pre-competitive consortia around high-risk R&D.
4. *Intersection of different knowledge sets*- networking also allows for different relationships to be built across knowledge frontiers and opens up the participating organizations to new stimuli and experiences.

From the review and my reflections the following is representative of what I consider to be the top three key aspects of R&D:

1. Knowledge/information sharing (pros and cons)
2. The individual and all that entails (culture, identity, roles, etc.)
3. Networking or Interacting (trust, reciprocity, influence, reputation, personal gain, motivation) and working together (team dynamics) to reach new results (project work)

R&D is essentially bringing ideas to life. Ideas originate in the minds of individuals. Ideas are generated based on the given context that individuals find themselves, both independent and dependent of one another. These contextual underpinnings are filled with percepts, assumptions and attributions of causal relationships that create behaviors. Organizations that aspire to have Global R&D configuration need to learn to adapt to this complex environment. The focus in the literature both R&D related and management and business related has focused on macro constructs, I however, see an advantage in exploring micro ones. Looking deep under the surface, to explore the nuances of how those very individuals that drive, impede and create R&D activities interact; the focus turns from how organizations manage this complex environment towards exploring what the context is telling us and how to transform these cues into better management practices. Times have changed in this context. I do not believe that organizations have fully understood the great changes that have happened to the internationalization of business and the impact it has on an organization’s R&D activities, which has created a newfound focus on *interaction* and emphasis on *collaboration*, forever changing how we work together.

CHAPTER 9- Literature Review- Culture

Chapter 9 is organized into three parts: 1) Understanding Culture, 2) Organizational Culture and 3) Influencers of Culture & Their Significance in Business. The chapter concludes with a summary of main points.

9 Introduction- Understanding Culture

Importance/Relevance of Studying culture in organizations

Why the focus on culture in an organizational perspective? After all, is it not the company's main concern to turn over a profit? And is it not the profit of previous ventures that allows for research such as this? So, if performance is good why spend so much time thinking, examining, and reflecting over issues such as culture? Culture is more than a quick-fix, more than a topical remedy, more than categories to organize people's national cultural traits. *It is important to study culture because the context of the organization has changed and this change implies that we need to rethink the fit of the theories and conceptualizations we use.* The majority of managers and engineers have been presented with categorical dimensions of understanding how culture functions. As it is to be expected very few managers and engineers have studied or explored the many ways the culture can be conceptualized; both managers and engineers have their focus elsewhere. However, when considering the context of MNCs and ambitions for future growth it is perhaps valuable to take a second look and rethink how we understand culture. As Alvesson (2002:1) points out while larger organizations tend to set focus on their organizational culture there is often a lack of understanding of deeper aspects of culture and the causes and effects of its use (or in the least possible ramifications). It is not just a focus on the organization's culture but a reevaluation of how culture is understood that is necessary. *It is in how culture is understood and what it implies that constructs the importance of its influence on organizations and their business results.* Therefore we must contemplate on what culture is in organizations and why it is of any relevant significance to understand it.

Importance of Context for Cultural Understanding

The context of international organizations plays a role in the how individuals act, react and interact. For example, contextual complexity can be experienced due to the following factors: geographical and cultural distance, multi-dimensional management structures, and knowledge sharing—both from an employee perspective as well as a managerial perspective (employees need access to specific information and knowledge while management wants to benefit from the efficiencies in synergies that come from sharing knowledge and working more closely together). Additionally, other factors that create complexity can be relational responsibility or reciprocity and the variety of focuses, mindset, aims & ambitions of the individuals and the organizing forms they belong to (such as groups, teams, networks, projects, functions, and departments, for example).

Direction- Embracing ambiguity

Culture has a tendency to also be seen as an abstract presence in organizational life; it tends to float in the periphery of organizations until for one reason or another (could be due to continued growth, internationalization and a diverse workforce) a more complex environment develops; pulling culture into the foreground. With the increasing exposure to a variety of cultures that are not 'like our own',

organizations begin to in the very least seek and have an invested interest to better understand their increasingly complex environment (this they do with the aim of improving it; nevertheless, it has been said in order to know how to fix something you need to understand it first). However, in organizations the concept of culture has been used as a means to create consensus and remove inconsistencies. Most of the time organizations are not seeking to understand but rather to manage and organize; losing out on the very diversity that they exalt as a competitive advantage. Thus, it is here where I begin; not just seeking to find effective solutions to complex problems but going deeper than usual, in order to understand and embrace the diversity that is the strength of multinational organizations.

As we embark on the journey of discovering culture in organizations, it is important to preface this exploration with these words—*culture is an intangible concept that can manifest itself in various forms, however, and it remains a constructed concept*. It is perhaps for this reason that practitioners tend to wonder—*why then should we place so much importance on such an intangible conceptualization?* It is in the very essence of organizations that they desire a need to organize, have structure, procedures and processes to attain aspired aims. It is, I believe, in this atmosphere that organizations must begin to make sense of the complexity that culture brings. Proponents of the culture concept adamantly agree that the culture concept can be a beneficial contribution to better understand and ultimately improve the context of organizational life.

Chapter Outline

Understanding culture for the purpose of this study will entail a three part review/analysis of the literature. PART I will explore the *origins* of culture; this will set focus on the *areas of study* that have been most influential in *defining* the culture concept. These are reviewed and their *influence on organizational life* explored. The above constitutes a first step towards understanding culture in organizations. This basic understanding of culture's origin will lead to PART II, where a review of the development of culture in organizations, i.e., organizational culture, will be explored. PART II of the review will unmask the underpinnings of organizational culture, and considers some of the varying definitions of organizational culture that can be found in the literature. Here I also critically examine the context of organizations and its impact on organizational culture as well as the context of business literature and what it means for culture and theory building. Thereafter I introduce Martin's 3 Perspective Theory and use this theory as the fundament to further explore other theories of culture in organization theory.

PART III begins with a recap of PART I and II, identifying culture's significance in business. Thereafter, I define culture for this study. Lastly, I explore five key aspects of organization life that influence how cultural manifestations are perceived and understood. I focus on acknowledging the *significant changes (what I called influencers) in business* that has led to towards a shift in how organizations should conceptualize culture. The chapter concludes with a summary; its aims restated, to have a better more thorough understanding of what culture is and why culture is *significant* for navigating complex business structures' such as that of International R&D activities (intra-organizational multinational knowledge networks) in growing MNCs.

PART ONE- UNDERSTANDING CULTURE

9.1 Origins of the Concept of Culture

The literature is replete with conceptualizations of culture from many origins and this is one of reasons that creates a growing issue for understanding and use of the concept.

There is some speculation as to the true origins of the concept of culture, for example, is it discussed in philosophical literature and perhaps also to what degree if any has the topic been discussed in other languages before it appeared in English academic literature. I presume the question then should be more how far back should we explore the connections, before getting carried away by sheer inquiry. For the purposes of this study I take an initial start in anthropology ca. 1871 when Tylor introduced culture as, "that complex whole which includes knowledge, beliefs, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society". Tylor (1871) focused studying groups of primitive people that were 'uncivilized' or not possessing culture. In this context culture was understood as something a person had; in other words culture could be possessed by few, e.g., the educated and refined elite. Accordingly, the term culture came to be compared to agriculture; as in the act of cultivating, of nurturing, envisioning that there was a likely singular and lineal aspect to acquiring culture from a state of infancy towards a state of maturity (picture Maslow's Pyramid of Needs & Self-Actualization as a common thread of influence through this period of time).

Most scholars do agree that the concept of culture originated in anthropological studies. In such research, culture was studied as a singular phenomenon as in a group of primitive peoples. Here the presence of culture was studied and possible components of culture were identified as symbols or artifacts, traditions, knowledge, or religion to name a few.

Anthropology's use of and focus on culture varied as different approaches emerged; Sackmann (1991;10-12) reviews the major approaches starting with cultural evolutionism discussed above, towards a historical focus where history and the individual combine to create an important story. She follows by delineating functionalistic approaches that focuses on systems and reduces the importance of culture to that of a variable. Below two important scholars Radcliff-Brown and Malinowski define culture. Radcliff-Brown et al (1952) focused on structural functionalism and his work was highly influenced by sociologist Emile Durkheim that defined culture as, "The totality of beliefs and sentiments common to the average members of a society forms a determinate system with a life of its own. It can be termed the collective or common consciousness". Durkheim also recognized when individuals interacted they created a culture and "attached powerful emotions" to it (Kenneth 2005:110). Similarly, Radcliffe-Brown believed that structure or institutions were the creators of culture but that the individuals were replaceable whether by death or other means; the systems would stand through time. However, it is important to point out that his ideas were grounded on the belief that institutions provided the social structure and schemes and that would later become a highly critiqued area of social functionalism since it brought up the issue concerning how an institution's development anticipates its function, in other words, it becomes a discussion of what came first the institution or the culture (Goldschmidt 1996:511) either of which completely omit the influence of the individual on both structure and culture.

Malinowski (1944:150) whom also considered himself a functionalist however more of a social functionalist defined culture as:

“an instrumental apparatus by which man is put in a position to better cope with the concrete, specific problems that face him in his environment in the course of the satisfaction of his needs. It is a system of objects, activities, and attitudes in which every part exists as a means to an end. It is an integral in which the various elements are interdependent. Such activities, attitudes and objects are organized around important and vital tasks into institutions such as family, the clan, the local community, the tribe, and the organized teams of economic cooperation, political, legal, and educational activity. From this point of view, that is, as regards the type of activity, culture can be analyzed into a number of aspects such as education, social control, economics, systems of knowledge, belief, and morality, and also modes of creative and artistic expression”.

Malinowski's underlying belief was to link culture as an instrument serving human needs. He expressed these needs as such: basic needs, direct responses, instrumental needs, responses to instrumental needs, symbolic and integrative needs and systems of thought and faith needs (Firth 1957:63 and Langness 1987:80).

Thereafter the development begins to include sociological considerations more so by exploring the combination of systems and individuals, which leads to exploring culture as observable behavior (Harris 1964). Further developments begin to include psychology and these approaches delve even deeper to explore culture as an internal (inside the mind of the individual) phenomenon where personality and discourse are considered as well. As early as the 1930's here in the work of Ruth Benedict (1934; 1942) we see an emphasis on the importance placed on using culture as an integrator but still with a focus on the individual's influence; she defined culture as, “A culture, like an individual, is a more or less consistent pattern of thought and action”, for Benedict culture was built up of personality traits that came to the foreground through the environment and through experiences, helping to shape individuals as well as society.

Later developments continue to explore concept of culture as a construct, and the study extends from these three original areas: anthropology, sociology and psychology, into new areas and in between spaces between different areas as well as within different areas of study.

When focusing on the three originating study areas there is a tendency to lean more towards a more holistic perspective of understanding culture. This is due to the progressive development of the concept of culture through these areas of study that show a growing awareness for a more holistic understanding where individual's live culture and thus culture is alive in them, thereby symbols and meaning understanding is part of creating and building culture.¹⁵ These perspectives originate through the works of Levi-Strauss (1958) that focuses on the psychological aspects of structures; he, “considers culture a system of symbolic communication”. Also the work of Geertz (1973:89) should be considered where he focuses on the combination of emic and etic descriptions and how symbols are involved in social processes; he defines culture as, “a system of inherited conceptions expressed

¹⁵ For a more detailed review of anthropology's history and culture's manifestation and development therein please see (Sackmann 1991; 8-16).

in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life”.

Table 14- Overview of Contributing Definitions of Culture Based on Three Areas of Study

Definition	Relationship to Structure	Relationship to Individuals	Underpinnings
<p>“that complex whole which includes knowledge, beliefs, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society”. Tylor (1871)</p> <p>“The totality of beliefs and sentiments common to the average members of a society forms a determinate system with a life of its own. It can be termed the collective or common consciousness”. Radcliffe-Brown (1952) influenced by Emile Durkheim</p>	<p>Culture was understood as singular and linear: Civilized culture being the best, other structures seen as needed to be fixed or cured.</p> <p>Radcliffe-Brown believed that structure or institutions were the creators of culture. It is important to point out that his ideas were grounded on the belief that institutions provided the social structure and schemes, that would later become a highly critiqued area of social functionalism since it brought up the issue concerning how institution's development anticipate its function (Goldschmidt 1996:511)</p>	<p>Class distinction from “savage” to “elite” where culture could be taught</p> <p>Durkheim also recognized when individuals interacted they created a culture and “attached powerful emotions” to it (Kenneth 2005:110). However, that the individuals were replaceable whether by death or other means, the systems would stand through time.</p>	<p>Anthropological; evolutionism; culture as a learnt trait.</p> <p>Focus on structural functionalism his work was highly influenced by a sociologist. Focus on integration.</p>
<p>Malinowski (1944:150) defined culture as, “an instrumental apparatus by which man is put in a position to better cope with the concrete, specific problems that face him in his environment in the course of the satisfaction of his needs. Such activities, attitudes and objects are organized around important and vital tasks into institutions such as family, the clan, the local community, the tribe, and the organized teams of economic cooperation, political, legal, and educational activity.</p>	<p>It is a system of objects, activities, and attitudes in which every part exists as a means to an end. It is an integral in which the various elements are interdependent.</p> <p>From the dynamic point of view, that is, as regards the type of activity, culture can be analyzed into a number of aspects such as education, social control, economics, systems of knowledge, belief, and morality, and also modes of creative and artistic expression”.</p>	<p>Malinowski's underlying belief was to link culture as an instrument serving human needs. He expressed these needs as such: basic needs, direct responses, instrumental needs, responses to instrumental needs, symbolic and integrative needs and systems of thought and faith needs (Firth 1957:63 and Langness 1987:80).</p>	<p>Malinowski also considered himself a functionalist however more of a social functionalist.</p>
<p>Ruth Benedict (1934; 1942) “A culture, like an individual, is a more or less consistent pattern of thought and action”</p>	<p>we see an emphasis on the importance placed on using culture as an integrator but still with a focus on the individual influence; she focuses on the psychological aspects of structures;</p>	<p>Culture was built up of personality traits that came to the foreground through the environment and through experiences, helping to shape individuals as well as society.</p>	<p>Sociological, integrationist view; focus on the environment and experiences</p>
<p>Levi-Strauss (1958) “considers culture a system of symbolic communication”.</p> <p>Geertz (1973:89) he defines culture as, “a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life”.</p>		<p>focuses on the combination of emic and etic descriptions and how symbols are involved in social processes;</p>	<p>Psychology, systems, symbols</p> <p>Sociological; focus on individuals and interactions; symbols</p>

All the definitions presented in the table above consider the relationship between the human being and society. Also all definitions consider ways that culture manifests itself. According to Martin (2002:55-56) these manifestations of culture are the building blocks needed to understand the theoretical assumptions (underpinnings) underlying a culture study: “manifestations of culture include rituals, stories, humor, jargon, physical arrangements, and formal structures and policies, as well as informal norms and practices.” All the definitions have varying underpinnings or ‘theoretical assumptions’ that create different ways of understanding and thus of using the concept of culture.

It was clear from the start that the concept of culture was an important concept as it transcended fields of study and varying paradigms. However, this popularity has also been a double edged sword for the concept, for while it would continue to appear important it still is part of the continuous problem that while many use, “similar terms and definitions the meanings they associate with culture are not always the same”(Sackmann 1991:7).

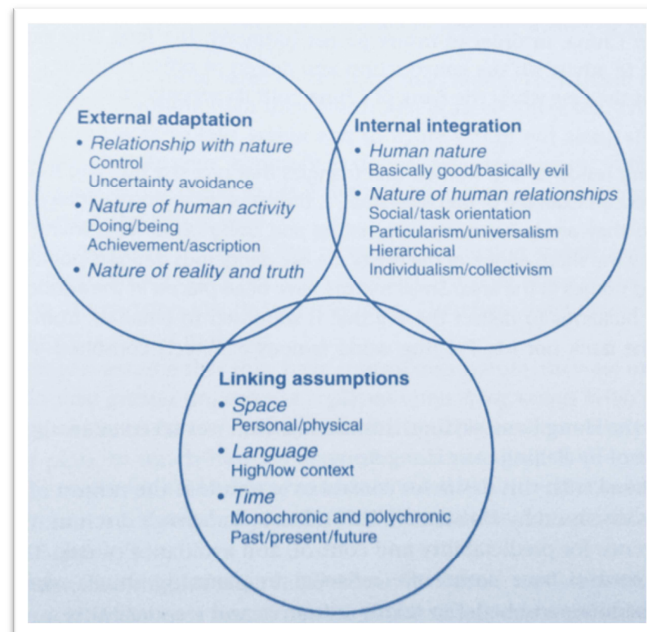
Scholars observe culture from contextually driven phenomena as discussed above and it is these underlying assumptions of these phenomena that guide the perceptions and ultimately the way we define culture. As cited earlier in the introduction, Tylor defined culture as, “that complex whole which includes knowledge, beliefs, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society”. While it would be easier to consider using Hall’s definition (1959:186), “Culture is communication and communication is culture”, it would however not get us very far after all, communication itself is a, “complex multi-layered, dynamic process through which we exchange meaning” (Adler and Gundersen 2008:70). The interactionist school of thought would also define culture as ‘negotiated’ as it explains the process of the non-static intercultural encounters (Brannen and Salk 2000:451). That definition while also a bit vague provides only an abstract explanation of the processes that occur. There have been countless attempts to define the concept of culture. The aim of this review is not to discuss all of these, here the aim has been to consider the most relevant and influential and why they have had such a great impact on organizational life. The context of the organization provides a frame for understanding the concept in more specific ways as opposed to how the concept has been understood in anthropology, sociology and psychology.

9.2 Reviewing the Three Main Areas of Study & their Influence on the Concept of Culture

In the above discussion the concept of culture was traced back to the three main areas of study (Anthropology, Sociology, and Psychology) that while all are very different, have contributed to the further development of culture. Below each one of these will be discussed in brief showing how they have influenced culture. While anthropology can be seen as the setting in which the concept of culture originated it is still important to consider how it has influenced the development of culture. As it has been indicated above culture originated with the study of peoples, their rituals, behaviors, internal and interactions amongst one another and their beliefs—values. Initially it was thought of as a singular concept, something you either possessed or not and depending on how large the gap between having and attaining it was, then one could perhaps mature into a state of possessing culture, or becoming civilized. There was an unfortunate tendency whether looking at it from the evolutionist or historical approach to have a sense of ethnocentrism—of looking and attempting to

understand others through one's own logic and values. Still, Anthropology has influenced the development of culture and also culture in organizational life through a number of aspects. The realization that culture is more than a singular concept has been instrumental in studying culture moreover that it deserves to be studied from various perspectives. Furthermore, the way in which anthropology studies groups of people has breached over into organization theory. It is now acceptable to use qualitative methods that include observations, interviews and participation; ethnographic research tools. The sociological considerations taken in anthropology that helped in developing the concept of culture is the focus on studying social systems as well as the causes and consequences of interactions in these systems. As Sackmann (1991) points out developments in the concept of culture begin to explore the combination of systems and individuals, which leads to exploring culture as an observable phenomenon. Psychology has also influenced how the concept of culture develops as it turns the explorative lens in on the individual's internal mental process and their enacted behaviors. Particularly influential for the development of the concept of culture is the focus on how individuals internalize culture. Additionally, the identifiable aspects of culture psychology are able to address, for example variables important in understanding the holistic process of understanding the manifestation of culture in society, e.g., variables such as personality and communication. For example, from a psychological standpoint the understanding of the conceptualization of culture has helped to clarify other variables and their importance, such as the concept of values. Engaging a determined focus on values provides psychologists a more in-depth tool for interpreting individuals and their environment versus just using attitudes (Hills 2002). Therefore, the contribution by Kluckhohn and Strodtbeck (1961) of value orientations where they attributed the existence of five (six) main issues common to all human groups: (1) human nature orientation, (2) man-nature orientation, (3) time orientation, (4) activity orientation, (5) relational orientation, and (6) space (was not further developed), provided a more detailed understanding not just for interpreting values but also for further developments on the conceptualization of culture. The figure below helps illustrate how these value orientations explicate underlying culture assumptions. Schneider and Barsoux (2003:34-35) have organized these underlying assumptions as external, internal and linking or bridging assumptions that all human beings possess.

Figure 45- Underlying Cultural Assumptions



Source: Schneider and Barsoux (2003) p. 34-35

Similar to the work of Kluckhohn and Strodtbeck (1961), Clyde Kluckhohn (1951) (anthropologist) also considered the individual's ability to adapt to complexity in order to make sense of their environment. In the following excerpt Clyde Kluckhohn (1951: 409-410) explains the underlying basic assumptions.

"There is a philosophy behind the way of life of each individual and of every relatively homogeneous group at any given point in their histories. This gives, with varying degrees of explicitness or implicitness, some sense of coherence or unity both in cognitive and affective dimensions. Each personality gives to this philosophy an idiosyncratic coloring and creative individuals will markedly reshape it. However, the basic outlines of the fundamental values, existential propositions and basic abstractions have only exceptionally been created out of the stuff of unique biological heredity and peculiar life experience. The underlying principles arise out of, or are limited by the givens of biological human nature and the universalities of social interaction."

Kluckhohn had keen observations regarding the potential of how understanding culture could help us study a more holistic perspective¹⁶ of groups. From the excerpt above one can see how there is an importance placed on individuals and their interactions, how they communicate, interpret and behave and that it is both about our lived culture (the one that we possess from traditions and our

¹⁶ When I discuss things as more holistic I do not mean more integrated. I mean that we consider all aspects of the phenomena. That missing a perspective would cause us not to have the full picture in order to make the best decisions.

society) but it also about the created culture (the one that is made up of our particular, uniqueness and how this affects our surroundings). The above excerpt also considers the existence of sub-cultures in homogenous groups, the importance of personality, and the internal and emotional human processes all of which play a role in creating and changing culture. Within the development of the concept of culture *the identification of values has given scholars the ability to highlight the role of the individual*. While a study of culture is generally motivated by the inherent need to explore, explain and understand and through these gain a greater awareness the next section will show the shift in focus that studying culture in organizations would prove to be built on different underlying assumptions e.g. a focus on the financial aspects of the organization, creating streamlined solutions and consensus amongst employees, all of which affect how culture is understood and ultimately how it is used in organizations.

9.3 Shifting Focus- Culture in Organizations, Influence in Organizational Life

Culture in organizations has developed in a more positivistic way possibly for the great need for organization theory to aim for efficiency, effectiveness and an overall consensus, and it has only begun to change to acknowledge the contextual complexity.

When we consider culture in organizations we can still address the same aspects discussed above, such as, manifestations, and the relationships of individuals and systems to culture. However, it is the environment, the underlying reasons for the cultures' existence as well as the future plans of the organization that creates an intense study of an ***initially constructed culture***; therein lies the first difference. Organizations are created; established systems and those that establish them have specific interests in mind. Granted these interests can change over time, however primary interests usually stay the same, e.g. Businesses such as Coca Cola retain the same primary interests that established the company in 1886 and the Peace Corp while having undergone many managerial changes over the years still retains its interest to send out volunteers to help in developing nations and the Red Cross still retains their interest for humanitarian aid. The next difference is the ***boundaries of organizations*** are more causal than of cultures studied out in society and this is due to the underlying interests of the organization; these direct their focus and thus their boundaries. While this discussion about boundaries is quite complex, the point here is to draw upon the distinctions between studying cultures and studying culture in organizations; and the importance of the underlying interests have on outlining organizational boundaries. The last main difference I will be focusing on here is that ***need for organizations to 'organize'***. This idea or metaphor if you will of organizing can be seen in all aspects of organizations: the desire for consensus, the need for rules for how to behave, establishment of missions, visions, and values, and of strategies and action plans to name a few. This need for structure, for order colors how businesses see and understand culture in their organizations. Smircich (1983) considered how the concept of culture is used in organization theory; she postulates that it is used as an internal or independent variable or as a metaphor for illustrative as well as simplification purposes. It can be surmised that in organizations culture then becomes a tool for managerial order. But the problem with this understanding is that culture is also alive, as it was explained above in the previous section, culture is lived (that which we inherit from the past) and culture is alive (that which we create in the present), thus culture cannot be controlled only perceived as such.

When studying culture in organizations we need to explore the context. Taking a step back it is important to also consider what other factors influence how culture is studied. For example, from an academic perspective scholars focused their theoretical developments on the following three assumptions: first, there are assumptions dealing with the ontological considerations or 'status' of social reality; secondly, assumptions dealing with the objective-subjective considerations and thirdly, assumptions dealing with human nature (Smircich 1983:340). The next part explores organizational culture in depth.

PART TWO- ORGANIZATIONAL CULTURE

9.4 Origins of organizational culture

The same is true for the concept of organizational culture as it has been for the concept of culture; they both struggle for a universal definition, and Van Maanen (1985:57) points out that while, "the term culture is powerfully evocative, it does not come from anthropology as an intact structural package ready to serve as a paradigmatic foundation on which to build the analysis of organizations". In the business literature organizational culture can be traced back to the concept *organizational climate*. It dates back to the work of psychologists Kurt Lewin and his colleagues who in 1939 studied Patterns of Aggressive Behavior in Experientially Created Social Climates. The concept was limited in nature as it focused on socialization and integration of new employees in organizations. Climate is not culture, it is a subset; a static picture of one aspect. Thus, in the 1970's scholars did not feel that the concept grasped the entirety of the environment in organizations, a lot of work went into expanding the area of study and in 1979 Pettigrew was the first to formally introduce the term *organizational culture*.

Through the 1980's and 1990's the study of culture in organizations became a hot topic primarily in the US both in and out of academia. Mostly known as *Corporate Culture*, many books and articles were published all promising to fix organizational issues by correcting the organizations culture woes through positivistic means and dealing with culture primarily as a tool managerial control in organizations. Because of its anthropological base the concept of organizational culture went against what management and organizational scholars believed to be the best method to conduct research in—the quantitative methods and the positivist paradigm. There has been a combination of contextual factors (will be addressed in [PART III](#) of this chapter) as well as the development of distinct schools of thought that have proliferated a growing minority opposing the main stream positivistic paradigm. "Organizational culture research attracted many researchers who found quantitative methods to be narrow, dry, and restrictive of the kinds of ideas that could be explored" (Martin 2002: 213). Scholars that support more ethnographic type of research continue to explore and develop theories that assist in focusing on complexity and the interrelationships between systems and individuals to culture. As Martin (2002:4-5) explains, it is a, "willingness to look beneath the surface, to gain an in-depth understanding of how people interpret the meanings of these manifestations and how these interpretations form patterns of clarity, inconsistency, and ambiguity" that focus on getting into the complexity.

9.5 Understanding the Underpinnings of Organizational Culture

Exploring a brief overview of definitions

Identifying one universal definition for organizational culture has proven just as difficult as with the concept of culture; again it is the interests/purpose that drives the need for defining the concept. Martin (2002:57) identifies twelve different definitions of organizational culture that vary in how scholars deal with focus, breadth and level of depth of interpretation for studying organizational culture. John Child (1998:229) an organization scholar states that the main problem with the concept of culture is that, “while it may be pervasive and widely manifest in social behavior, artifacts, and the humanly created environment, it is in itself intangible and elusive”. While I would agree that the concept of culture can be construed as intangible and elusive, especially for business scholars that aim for integration and efficiency, I would argue that main problem is not the latter stated by Child rather how *the concept of culture is constructed*, which leads to how it is understood and thus, how it is applied in various fields and contexts. If the concept of culture is constructed in one way but understood in another and thereafter applied with different underpinnings than it was constructed there will always be a mismatch. There have been great strides made to make sense of the concept so that organizations can better understand cultural underpinnings and the effects that using specific theories can have on them. When focusing on organizational culture research the following excerpt from Sackmann (1997:25) and also in Boyacigiller et al (2002:3) refers to a growing number of theorists’ that share in the same mindset with regards to defining organizational culture; focusing on the cognitive and relational aspects of culture.

*“The core of culture is composed of **explicit and tacit assumptions or understandings** commonly held by a group of people; particular configuration of assumptions and understandings is distinctive to the group; these assumptions and understandings serve as guides to acceptable and unacceptable **perceptions**, thoughts, feelings and **behaviors**; they are learned and passed on to new members of the group through **social interaction** (bold for emphasis by me); and **culture is dynamic**—it changes over time, although the tacit assumptions that are the core of culture are most resistant to change. (adapted from Kleinberg, 1989; Louis, 1983; Phillips, 1990; Sackmann, 1992b; Schein, 1985).”*

Schneider and Barsoux (2003:34-35) attributed the most classical organizational culture theorist to have taken their underlying assumptions and perceptions of culture from the Five point (originally six point) Model introduced by Kluckhohn and Strodtbeck in the early 1960’s. Organizational culture is twofold, it is, “concerned with certain **values** (interests) managers are trying to instill in their organizations. In other words, you can perceive it as a result¹⁷ of a **complex group learning process**” Schein (1985:3). It is also important to consider the component of **shared meaning** or the **co-creation of meaning**, which according to Claes (2009:72) “can also serve as a managerial tool to provide a basis for meaningful social action in transnational organizations”. Martin (2002:155) adds an important reflection towards defining culture, “**culture still cannot be defined only as that which**

¹⁷ The word *result* here should not imply that culture is a destination; emphasis on the word *process*. Culture is not a static point one should aim for, it a continuous process of change with varying degrees of change, depending on various contextual factors.

is shared” here Martin intends to raise awareness for the simple fact that just because individuals do not share a cultural manifestation they can still be part of a culture. For example, as Martin states, “what people disagree about and what they find ambiguous are just as much a part of culture as what they share” (p.155).

From the above review of organizational literature, it can be understood that the definition most propagated in organization literature is that organizational culture is a mechanism to create and maintain roles and norms and general patterns of behavior that are pleasing to the organization. However, as I observed in reviewing the literature, it is how the concept of culture is constructed and understood; it is the existing inconsistencies that are the main problem for both academia and organizations alike. Exploring the definitions above brings about to very important point when considering organizational culture: 1) the context in organizations and 2) the content of the literature on organizations.

9.5.1 The Context of Organizations & its Impact on Organizational Culture

In order to truly understand that which we study we need to be able to see it for what it is. When we study organizational culture, we study in the context of the organization. Granted organizations are part of the great society but if we focus on this then we miss the point of studying organizations internally. It is vital to identify and understand the complexity of the context that we find ourselves in. Here I emphasize the three main differences between the concept of culture and culture in organizations discussed in PART I as the three distinctive contextual elements that affect the study of culture in organizations: 1) *Initially Constructed Culture guided by Interests of Initiator* 2) *Boundaries directed by Interests* and 3) *Organizing Metaphor Inherent in Organization life*.

Initially Constructed Culture guided by Interests of Initiator

When identifying the start of a culture usually we have a situation of, what came first, the chicken or the egg? However, when identifying the start of an organizational culture it is much easier to pinpoint. The interests/purpose for the organizations’ existence guides the culture. The type of initiator, “founder” and the management will have a reflection on the type of culture the organization begins with. “Founders have a vision of what the organization should be. They are constrained by previous customs or ideologies” (Robbins and Judge 2007: 582). Schein (1996:61-62 in Robbins and Judge (2007:582) considers three ways cultures are created: 1) founders hire like-minded employees 2) employees are indoctrinated and socialized in their ways and 3) the founder’s behavior continues to work as a role model, ultimately founders can have a great significance on how the culture in the organizations develops over time and how it affects the organization’s aims—whether it aids or impedes them. This is why many organizational culture scholars explore the beginnings of an organizations (just as culture scholars explore a societies history) to find clues as to why it behaves the way it does; these interpretations can be revealing for the future of the organization. Schein (1991:249) also considers the effect of the founder as a “learning process” where individuals are exposed to the founders ‘beliefs, values, and assumptions about how to proceed’. The success of these applied understandings will continue to proliferate amongst the individuals that are part of, in this case, a newly established organization. This is not to assume that individuals follow blindly or that there are no differences of opinion, or incongruities. Martin, Sitkin and Boehm (1985:100) make it a point to address the importance of acknowledging the significance

of the founder but not being blind to it as the sole inspiration. It is also significant to consider the “internal conflict and differentiation that are characteristic of complex institutions” and how this complexity has outcrops in emergent subcultures (discussed in further detail below); manifestations of multiple cultural perspectives.

Boundaries directed by Interests

Secondly, the boundaries of the organization are directed by its interests/purpose, in other words, boundaries are used as feelers to identify the organization. This depends to a great deal the maturity of the organization coupled with its aims, i.e., niche markets, internationalization or globalization. Huntington (1993:24) also recognizes that people possess levels of identity. “People can and do redefine their identities and, as a result, the composition and boundaries of civilization change”. This can and also applies within the context of organizations. Internally in organizations, boundaries can be both physical and cognitive and can have a say in the level of involvement among the organization’s stakeholders. Culture in organizations also functions as a boundary definer through both traditional ways of classifying individuals such as how figure 46 below illustrates the different classifications can permeate an organization and in doing so it creates intangible but very real boundaries in the social interactions of those individuals. Organizational boundaries can also represent cognitive constructs that through interaction amongst individuals become permeable. Such boundaries can be, for example, power, influence, expertise, status, education, experiences, to name a few (some of these boundaries resembles the associative tiles presented by Chao and Moon (2005:1129) tiles that are representative of classifications used by individuals to establish and maintain their identities. These will be discussed further under Fragmentation Perspective in [PART II](#) of this chapter). It can also be said that these very same boundaries and identity manifestations can also be used to produce in and out groups within organizations (Van Maanen and Barley, 1985, Martin, 2002, Wenger, 2002). This issue is important, for example, when dealing with cultural barriers and cultural misunderstandings in multi-cultural settings where colleagues located outside of the HQs may not understand or may perceive being ‘left out’ when in reality that is not an intentional act from their colleagues.

Organizing Metaphor Inherent in Organization life

The last contextual element needs a longer discussion as I believe it is of vital significance to how culture is understood in organizations. It is in our nature to create order so that we can understand; we create categories and organize our world so that we can make sense of it. Merriam-Webster’s Dictionary defines organization as, “an administrative and functional structure”. The Oxford Dictionary defines organization as, “An organized body of people with a particular purpose, as a business, government department, charity, etc.” Organizations constitute a system of structures, people and procedures set up in order to achieve specific aims. Meadow (1967:78) makes the case for the metaphor of order that is implied in organization theory. He states, “Organization is a function of the problem of order and orderliness: similarly, conceptualizations of social organization have been a function of the conceptualization of the problems of order and orderliness”. As Weick (1979:3) defines, “to organize is to assemble ongoing interdependent actions into sensible sequences that generate sensible outcomes”. Traditionally, organizations have organized culture in two primary ways: 1) national vs. organizational and 2) sub-culture in organizations. The following two sections account for these perceptions.

9.5.1.1 National vs. Organizational

Many culture researchers in organization theory have focused on diagnosing the symptoms of dealing between national cultures, e.g. differences in how different cultures understand human nature, how they understand nature, their relation to time and space, how they understand human relationships and how they understand and perceive action and activity (Hofstede 1985; Trompenaars 1993 and most recently the Globe studies with House et al 2004).

While the term and meaning has continuously evolved from its origins, national boundaries are still used to denote classifications of culture. Thus national culture came to stand for the norms, values, behavior, religion and customs of a country (Hofstede 1980, Trompenaars, Alder 1983:40). While the classic cultural dimensions of Hofstede (1980) and Trompenaars (1993) are useful at macro levels of analysis, they have lost their appeal at meso and micro levels of cultural analysis. Clausen (2006:53) discusses the dangers of stereotypes and these cultural dimensions are just 'sophisticated' stereotypes (see also Osland and Bird 2000).

Culture as a classification of the national norms and beliefs that create understandings and perspectives and values around the world will also affect how the organization's external environment is analyzed. "National identity does not merely imply the embodiment of a cognitively constraining cultural outlook, as cross-cultural writers suggest, but is itself a flexible cultural creation into which people impute variable and fluctuating meanings" (Ailon-Souday and Kunda 2003:1075). Moreover, it is in focusing on the interactions whether inter- or intra-relational that should be of most importance to organizations when studying culture. Even Child (1998:233-234) when discussing national culture differences as possible "barriers to cooperation both at the level of simple misunderstandings and at the more fundamental level of conflicts in values" also realizes that these cultural differences are "relatively superficial" and should not pose too difficult problems. It is more the "socially-embedded values" that individuals hold that creates significant conflicts. Moreover, globalization and the proximity to tap into one another's culture has created hybrid cultures that make the generalizations based on the cultural dimensions less and less applicable. Additionally, these studies focused on the macro level, while less functionalistic scholars have dared to venture towards the more ethnographic, deep description side of the micro level of culture studies causing these dimensions to have little bearing on the internal context of culture in organizations. This in part has sparked a more thorough exploration of organizational culture.

9.5.1.2 Sub-cultures in Organizations

From a functionalistic perspective subcultures can be seen as the "seeds of conflict". In addition, subcultures can also be seen as a "...barrier to effective cooperation [that] can arise when culture becomes an expression of social identity (Tajfel 1982), symbolizing the group with which people identify and which distances itself from other groups" (Child, 1998:233). However, subcultures can also be a positive, unifying force rather than just a divisive one as many scholars have suggested¹⁸. More and more the literature is referring to the existence of cultural pluralities, where various

¹⁸ This older way of thinking bases its logic on the idea that there is only one true culture and that it is important for the success of the organization to remove subcultures. However, this study's focus is to shed light on the importance and significance of subcultures as both vital for the survival of healthy organizations but also provide insights to a top management that may be too close to be critical of potential issues that may impede the success of future aims.

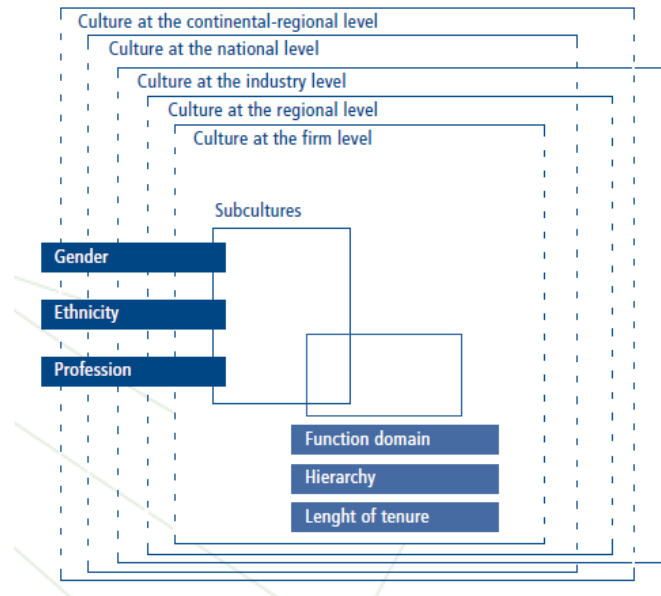
cultures exist simultaneously (Sackmann 1997, Martin 2002, and Alvesson 2002). Even when there is a “strong” organizational culture such as those illustrated by, IKEA, Coca Cola, Mærsk to name a few examples, it does not remove the existence of sub-cultures. Robbins and Judge (2007: 575) suggest that we should expect that individuals with different backgrounds or at different levels in the organization will tend to describe the organization’s culture in similar terms. However, this does not mean that differentiation and other inconsistent and ambiguous perspectives that contradict the representative culture of the organization do not exist, nor does it mean that they may not carry significant implications for the organization. Subcultures can lay dormant until ‘triggered by unexpected events’ and individuals that adhere to different subcultures can interact without knowing about their differences (Van Maanen and Barley, 1985). Van Maanen and Barley also (1985:50) discuss two dimensions for understanding the influence and weight subcultures can have on organizational actions, one is the degree to which the subcultures extend outside the boundaries of the organization and the second criteria is the “prominence”, “centrality” or “power” over primary “organization work flows”. Sackmann (1997:2) states that her research has revealed that, “culture within an organizational setting may be both integrated and differentiated at the same time (see Sackmann, 1991, 1992)”. “Hence, the cultural complexity perspective suggests that culture in organizational settings is much more complex, pluralistic, diverse, contradictory, or inherently paradoxical than previously assumed, conceptualized, or acknowledged” (Sackmann, 1997:2).

Subcultures are created out of necessity by the individuals within the organization for a number of reasons e.g., to identify problems, to delineate areas of expertise and/or rank, or simply due to geographical locations that have specific and unique characteristics that naturally create a different culture than that found in headquarters or to create validation spaces for their identity/roles. This last point about identity is similar to what Schultz (1991) described as *symbolic domains*, and in Martins book (2002:157) this explains how “people in organizations can easily shift their viewpoints and behavior to fit changing interactional contexts”. New information, observations, interpretations can lead to revising or shifting perspectives and is related to how individuals develop interests and motivations (this point will be further developed in Chapter 11 reviewing the Individual and their Interactions). There is nothing wrong in having subcultures as long as the core values consistent with those of the main organizational culture, the representative culture is permeable and relevant in these sub-cultures. From a functionalistic perspective, it is when subcultures become dominant that true identity issues occur in organizations; usually making it difficult for individuals to understand their place and as a result creating conflict and unnecessary complexity. However the concept of cultural complexity discussed by Sackmann (1997) argues as others such as Martin (2002) does that organizations possess, “simultaneously existing multiple cultures that may contribute to a homogenous, differentiated and/or fragmented cultural context”. Sackmann (1997:2) adds:

“Members of an organization are unlikely to be restricted in their membership to one single culture or subculture, because people may identify with their gender, ethnic background, parent and spouse roles, sports club, city, the university from which they hold a degree, profession, department, division, work organization, geographical region, industry, nation, or greater region such as Europe, America, or Asia. All these potential cultural identities may simultaneously influence the cultural context of an organization”.

Please see the following figure for an illustration.

Figure 46- Multiple Culture Perspectives



Source: Sackmann (1997:3) *Cultural Complexity in Organizations*

While, from a functionalist perspective, it could seem useful for simplification and explanatory purposes to classify culture along the various levels expressed in the above figure, it is important to consider that by cooking culture down to categories we lose the complexity that tells the story of culture. Furthermore, it is important to remember that, “cultural boundaries need to be construed as permeable, rather than as walls which differentiate and segregate” (Jacob 2005:515), thus confining individuals and/or groups to categories will only provide part of the story. An individual can find themselves as members of various and at times what would seem to be opposing classifications. Chao and Moon (2005) explore this dynamic and non-linear perspective with their Cultural Mosaic theory that explores how individuals possess different and multiple cultural tiles simultaneously. This perspective allows for the opportunity to explore both the whole as well as the parts of an individuals’ culture. As they explain that in addition to contextual situations it is also valuable to recognize, “that our cultural identities may reorganize themselves when new identities are learned and old identities shed or evolve highlights the need to examine the cultural mosaic as a whole. [Thus], an individual’s cultural mosaic is greater than the sum of its parts” (Chao and Moon 2005:1134). This theory will be further elaborated under the fragmentation perspective below. At the end of section 9.5 I outlined two important aspects of culture brought out by the review of the definitions. This section 9.5.1 dealt with the context of organizations and explored three contextual elements: the role of the founder, boundaries and how organizations have structured culture—nationally vs. organizationally and through sub-cultures. The next section turns to the second important aspect identified in section 9.5.1 the content of the literature on organizations.

9.5.2 Business & Organization Theory Plagued by Polarities

When exploring the origins of organizational culture it is evident that most management scholars were more at ease quantifying what anthropology, sociology and psychology for the most part had left qualitative. Given the context of organizational culture explained above we can see the need for organizations to organize. This coupled with the interests/purpose guiding organizations results in a need for efficiency, for stream-lined solutions. However, it is while contemplating this need for quick-fix remedies that also questions the sustainability of such solutions. Trompenaars (2010)¹⁹ makes a valid point when he said,

“Most of our models are linear or bipolar. Are you this or are you that?” He goes on to give an example of the human body, “Let’s take our human bodies: Is that centralized or decentralized? And we all know that answer is yes. Because if we centralize everything we die and if we decentralize everything we die. And life is how do you combine these two opposites.”

This metaphor is meant to be applicable in business as well in academia and in how we develop theories and models for organization theory to be versatile, practical as well as informative and insightful.

“Mumby (1994, p.158) states that “Theories do not neutrally reflect the world, but rather ... construct it in a particular fashion” (In Martin 2002:154). From this viewpoint, theories can be evaluated by their power to provide insights that might otherwise be overlooked rather than by how accurately they represent some objective reality. It is for this reason and all the others identified above that I will choose to use Martin’s Three-perspective theory to organize my review of the major theories in organizational culture that follows.

9.6 Martin’s 3 Perspective of Culture in Organizations

In this section Martin’s three perspective theory is introduced, and reviewed. This section is followed by a review and discussion of major organizational culture theories through the lens of Martin’s theoretical framework (in section 5.9). It is my understanding that this will aid the reader in understanding not only the theories but also the context of organizational culture.

A cultural theorist, Martin focuses the three perspective theory on how to embrace contextual complexity and explore all aspects just not consensus seeking ones sought out by positivist organizational culture research. Martin (2002: 120) defines organizational culture, “as consisting of in-depth, subjective interpretations of a wide range of cultural manifestations (a generalist rather than a specialist view), both ideational and material. Culture, should be viewed from all three theoretical perspectives, not sequentially but simultaneously.” In other words, all three perspectives coexist in large organizations. Martin (1992; 2002:95) identifies three theoretical perspectives of integration, differentiation and fragmentation defined below:

1. The Integration Perspective looks for “collectivity-wide consensus” and is mostly focused on managers and professionals. There is a focus on “organization-wide harmony and homogeneity”.

¹⁹ Trompenaars (2010) excerpts from keynote speech at the IMI Conference in Washington, DC USA

2. The Differentiation Perspective values inconsistencies in interpretation. And as Martin states (2002:102), “dissenting voices are not silenced or ignored and subcultural differences are a focus of attention”.
3. The Fragmentation Perspective focuses on ambiguity, here “consensus is transient and issue specific” (Martin 2002:94).

The three different viewpoints highlight very different aspects of a culture. The integration perspective focuses on “attributes”, while the differentiation perspective focuses on “limitations” and the fragmentation perspective focuses on “blind spots” (Martin 2002:115).

The following figure represents the three theoretical perspectives set along three different dimensions: orientation to consensus, relation among manifestations and orientation to ambiguity.

Figure 47-Martin’s Three Theoretical Perspectives

	Perspectives		
	Integration	Differentiation	Fragmentation
Orientation to consensus	Organization-wide consensus	Subcultural consensus	Lack of consensus
Relation among manifestations	Consistency	Inconsistency	Not clear consistent or inconsistent
Orientation to ambiguity	Exclude it	Channel it outside subcultures	Acknowledge it

Source: *Martin (2002) Organizational Culture* pp.95

9.6.1 Critical Evaluation of Three Perspective Theory

Martin’s Three Theory Perspective does not presume to cover all perspectives of cultural studies just main streams. Overall Martin (2002) reaffirms that these three perspectives are not an end all be all for understanding culture in organizations. Martin (2002) argues, “that all three perspectives should be used together simultaneously, at a single point in time, to search for “the patterns of meanings that link the manifestations together, sometimes in harmony, sometimes in bitter conflicts between groups, and sometimes in webs of ambiguity, paradox and contradiction” (p.156). The following list, elaborated below, shows the five most common misunderstanding of the theory:

- The three categories are not boxes & cannot be used to describe individual researchers
- Perspectives are not merely levels of analysis
- Hidden perspectives are not less important
- One of the three perspectives will NOT provide a more “accurate” description of a culture at a particular point in time.
- Culture cannot only be defined as what is shared

The three categories are not boxes & cannot usually be used to describe individual researchers

According to Martin (2002:150), "A perspective is a category that can be used to classify a study that predominantly uses a single perspective. A perspective should not usually be used to classify the entire research output of an individual because many researchers use different perspectives across different studies as their views change or as they experiment with different ways of thinking about cultures."

Perspectives are not merely levels of analysis

Reducing the three perspectives to what would seem to be corresponding levels of analysis (e.g., integration as organizational, differentiation into group and fragmentation into the individual level) would be a major error. The following table presents how radically complex perspectives are; simplifying them down to just levels of analysis would be wasteful.

Table 15- Underlying Difference of Perspective

	Definition of Perspective	Relationships of Subcultures	The conception of the self
Integration	homogeneous unity	mutually reinforcing	unified self
Differentiation	a collection of subculture	conflicting with each other	a self-divided into separable components; a member of different overlapping, nested subcultures
Fragmentation	gathering of transient, issue-specific concerns, constantly in flux	independent, or so ambiguously related that clear congruence or conflict is impossible to diagnose	a postmodern, fragmented identity with porous boundaries, reflecting and refracting a variety of cultural influences

Source: *Based on discussion in Martin (2002: 151-152)*

Martin (2002: 151-152) adds that, "with such profound conceptual differences, at all levels of analysis, each perspective is deeply different from the others. The three perspectives are not just three levels of analysis." There can be example of differentiation studies that have an integration perspective at a lower level of analysis (e.g., within sub-groups, teams).

Hidden perspectives are not less important

Martin explains a "home perspective" meaning that one of the three perspectives is the one that a researcher prefers, possibly due to experience working with such data, perhaps even unconsciously. "It requires temporary suspension of one's commitments to consider the possibility of alternative views". (Fairhurst and Putnam 2006:22) Martin (2002:152) is adamant in stating that, "hidden perspectives are not less important, especially for those interested in predicting or influencing change." Hidden perspectives are not obvious that may require reflexivity and as Martin (2002: 152) states may, "provide a useful clue about what the future will hold."

One of the three perspectives will NOT provide a more “accurate” description of a culture at a particular point in time.

“All three perspectives are relevant at any point in time; one is not temporarily more accurate than the others” (Martin 2002: 153). “This is why any cultural portrait is more complex and inclusive if it is regarded, at any single point in time, from all three perspectives (Martin, 1992a, p.174; Martin & Meyerson, 1988; Meyerson & Martin, 1987). Martin (2002: 154) adds, “No one perspective is empirically more accurate than the others—a home perspective is simply easier to see.”

Culture cannot only be defined as what is shared

“No matter how you slice it, culture still cannot be defined only as that which is shared” (Martin 2002:155). “What people disagree about and what they find ambiguous are just as much a part of culture as what they share” (Martin 2002:155). “In other words, this argument assumes that most members of a culture share the same home perspective. The problem is that the members of a culture may disagree about which view of their culture is the home perspective” (Martin 2002:156).

9.6.2 Critique- Methodological Considerations

The critique of the Three Perspective theory is centered on methodological issues. Taylor, Irvin and Wieland (2006:310) view Martin’s theory as a meta-theory that has the following methodological issues: 1) blending of epistemological and ontological underpinnings, 2) the three perspective theory desires to gain a holistic picture of the phenomena—with great risk of ending up as “residual objectivism”, and 3) “views communicative practices as the manifestation of preexisting meanings, rather than as the means of their creation, reproduction, and transformation”.

Taylor et al (2006:310) recognize Martin’s theory as fusing; epistemologically, culture is conceptualized as a metaphor, while ontologically, culture is seen as a variable. They point out that the use of culture as a variable can also be depicted as a metaphor. Those scholars that follow more traditional lines of demarcation for paradigm understanding may find Martin’s understanding, explanation and use of methodology unnerving. Martin’s (2002) book only provides a “very brief and simplified” introduction to ontology and epistemology she makes it very clear that, “epistemology entails some assumptions about the nature of reality, making it difficult to disentangle it from ontology”. I do not see how this dance between ontological and epistemological considerations could cause reservations, as long as, researchers are aware of these connections. While I recognize the concerns of caution, a more thorough review and discussion of the above presented methodological considerations concerning the paradigm interplay is out of the scope of this study.

Secondly, Taylor et al (2006:310) consider Martin’s theory to have what they call “residual objectivism”, and they go on to cite Mumby (1994:158) where he states, “The assumption is the more theories we generate, the more we are able to develop a complete and comprehensive picture of the phenomenon”. In a sense, he is suggesting that Martin while using a subjective approach to creating theory is searching for a holistic “objective” reality to justify empirical evidence. Taylor and Mumby make good points however, as Martin (2002:122) emphasizes while there could be a fourth or fifth perspective it is important to consider the “law of diminishing returns”, in other words, the output will not be worth the time invested into one study. Her main argument focuses on how the three perspectives and their combination offer an “impressive scope” when considering figure 47 above that describes the combination of degree of consistency across manifestations, degree of consensus, and orientation towards ambiguity.

Lastly, Taylor et al (2006) refer to Brummanns and Putnam's (2003:644) review of Martin's book where they explicate how interpretation of symbols could be misconstrued to come from preexisting meanings instead of creating, transformation and reproducing meanings; thus, "readers may not realize that symbols are outgrowths of talk and text that have come into being through the way that interaction both performs and negotiates meanings". However, having delved extensively into this book I do not believe this to be a case for concern. Martin's pro-subjectivist stance logically confirms that she is for construction and interpretation of meaning creation. According to Martin (2002, 55-56) manifestations²⁰ and content themes²¹ are the building blocks needed to understand the theoretical assumptions underlying a culture study. Moreover, Martin's stance is strongly focused on the ability to interpret manifestations, while being reflexive and adaptable, "the core of the three-perspective approach is a proposition concerning simultaneity" and reflexivity. The above points can be used to further reduce concerns caused by the assumption made above regarding the creation of meanings.

9.6.3 Concluding Points

Martin's (2002:118) multi-perspective theory carries with it an implication of "self-analysis" and "reflexivity" as it can be beneficial to explore what the researcher considers relevant and what they consider irrelevant. Keeping in line with the explanations in her book Martin makes it a very specific point to convey throughout the book that none of the three perspectives take precedence over the other and that if that should be the case in your study, it is you as the researcher that should probe in order to identify the underlying (dormant) perspectives. It is as Martin (2002:119) explains in the following excerpt:

*"A cultural observer is interested in the surfaces of these cultural manifestations because details can be informative, but he or she also seeks an **in-depth understanding** of the patterns of meanings that link these manifestations together, sometimes in **harmony**, sometimes in bitter **conflicts between groups**, and sometimes in **webs of ambiguity, paradox and contradiction**."*

Moreover, the three theory perspective "helps us view the world in a particular, socially constructed way, stemming from the viewpoint of the researcher and the characteristics of the context and the people being studied" (in Martin 2002:154). This has multiple benefits, 1) it helps methodologically investigate underneath the surface of an organization's culture and 2) it provides the organization insights to their realities not just the branded story, 3) provides multiple views of organizational culture, of the organization, and 4) embraces critical discussion in organization theory.

9.7 Reviewing Organizational culture theories – Martin's three perspectives

As stated upon introducing Martin's Three Perspective Theory (in section 9.6), section 9.7 reviews the organizational culture theories by using Martin's Three Perspective theory. All this means is that

²⁰ Manifestations of culture include rituals, stories, humor, jargon, physical arrangements, and formal structures and policies, as well as informal norms and practices.

²¹ Content themes (such as values or basic assumptions) are used to capture and show the relationships among interpretations of the meanings of these manifestations.

I have identified if the theories fall under one of the three perspectives: integration, differentiation or fragmentation. The review follows below.

9.7.1 The Integration Perspective

According to Martin (2002:96), integration studies focus on 'collectivity-wide consensus' and are primarily focused on managers and professionals. The integrations perspective is bound by a limited reach in its context, in other words, this perspective is driven by management and its interest and purpose. Usually the specific business focus of this perspective means as Martin and others have explained that the differences and ambiguities are ignored or removed for the greater good. There is a tendency of believing the individual is non-consequential, meaning that those outliers, the inconsistencies can be removed and the system will continue to function; one 'dysfunctional' individual replaced with a new individual. And while admittedly, systems do tend to continue to function, however, we may not know for how long and what the repercussions of these actions have on the system. When exploring the other two perspectives, it becomes clear how individuals do matter and how great the impact of a specific person may have on the organization. However, setting the latter point aside for a moment, it is important to consider the integration perspective, since, it has developed many theories for managerial purposes. As Martin suggests, it is not ignoring this perspective but combining all three that provide organizations with the best and most complete picture of the status of their organization. When exploring integration studies, the most discussed and cited organizational culture scholars are Geert Hofstede and Edgar Schein; much as been written about these particular scholars, this is not the place to debate it at length. Here my intention is to present the theory in brief and discuss the benefits seen from an organizational theorist/integration perspective.

Hofstede (1980:391) defines organizational culture as, "the collective programming of the mind that distinguishes the members of one organization from another." Hofstede also pinned the dichotomy between organizational vs. national culture. He developed the theory of Cultural Dimensions that put up five (power distance, uncertainty avoidance, individualism vs. collectivism, femininity vs. masculinity, long-term vs. short-term orientation and also a sixth dimension called indulgence vs. restraint) categories where the culture of that region/nation and thus managerial traits could be evaluated and assumed to be understood. Much has been written both for and against Hofstede's Culture Dimensions. From an organization theory and managerial perspective it provided a quick-to-understand typology, however, from a culture perspective there are many inconsistencies in the theory. For example, cultural dimensions are generalizations of a set of traits said to be found in specific national cultures. While it may be an efficient means to evaluate organizational leadership through culture, the Culture Dimensions of Hofstede, in particular, reduce complex constructs like leadership, to just two variables (Jacob 2005:516). The main issues I have with this theory is that it fails to acknowledge the idiosyncrasies, or layers if you will (see Hans Gullestrup, 1993), present in all nations, in all cultures, in all people. Moreover, Hofstede's definition of organizational culture as a "collective programming of the mind", focuses again on a managerial objective of the existence of one culture in an organization, and this is simply not the case; the complexity in the organization's context automatically nullifies this logic.

Since the mid-80's Edgar Schein a well-known organizational culture scholar, has been developing the concept of culture. In 1991 Schein addressed the need for reassessing the conceptualization of

culture in organizations. On his journey towards redefining culture in organizations he pointed out the following aspects of culture:

1. Culture implies long-range stability (perseverance/permanence) Organizations with good cultures are the ones that survive and grow. (Have you ever heard of a prosperous organization with a bad culture?)
2. Culture emphasizes conceptual sharing or consensus
3. Culture implies patterns
4. Culture implies dynamics (multi-dimensional)
5. Culture implies all aspects of group life

All the above points are meant to garner integration in exploring culture in organizations. Edgar Schein (1985 and 2004:26) established a hierarchy type of model for understanding organizational culture by identifying three levels of culture found in organizations, namely artifacts, espoused values and basic underlying assumptions. Based on this understanding for conceptualizing culture Schein (1991:247) defined culture as, "A pattern of shared basic assumptions, invented, discovered, or developed by a given group, as it learns to cope with its problems of external adaptation and internal integration, that has worked well enough to be considered valid, and, therefore, is to be taught to new members of the group as the correct way to perceive, think, and feel in relation to those problems". Much easier to cope with, however, here the issue is still the same; that culture can be managed and controlled. Martin uses Schein in many of her examples of the integrationist perspective. In the following example Schein (1991b) is discussing a study:

"What this 'model' does say; however is that only what is shared is, by definition, cultural. It does not make sense, therefore, to think about high or low consensus cultures, or cultures of ambiguity or conflict. If there is no consensus or if there is conflict or if things are ambiguous, then by definition, that group does not have a culture with regard to those things (pp.247-248)" (Schein in Martin 2001:97-98).

The point that I want to make here is that they do indeed have a culture, they are not in consensus but they do share a culture. However, if the underlying assumptions and values of the individuals in the group are so drastically different then their ability to remain in the group may change then the change may affect their relationship and affiliation to the group.

Opponents of integration studies argue that the aim of integration studies focuses on promoting an 'image of organization-wide harmony and homogeneity' is not sustainable and does not reveal hidden conflicts and ambiguities that could predict future issues. The next perspective, the Differentiation perspective aims to expose elements of the phenomena that are hidden and that could be valuable learning tools for the organization.

9.7.2 Differentiation Perspective

As Martin (2002:101) states the, differentiation studies focus on cultural manifestations that have "inconsistent interpretations" and as mentioned before "dissenting voices are not silenced or ignored and subcultural differences are a focus of attention" (Martin 2002:102). According to Alvesson (2002:2) we must not forget that it can be both tempting and dangerous in organization theory to try to create streamline cause and effect relationships for how culture has, can or will behave itself. This view will create a "rather simplistic view that seriously underestimates its

theoretical potential and value". Nonetheless, it is more valuable to consider "how organizational culture is significant as a way of understanding organizational life in all its richness and variations". This is why it is important to consider the multi-dimensional and complex environment²² of large organizations. Understanding the environment by making sense of the observed and researched phenomena creates meaning in order to function as it does and provides tools for the present and future situations the organization may confront.

An example of theories that use the differentiation perspective is the Native-View Perspective adopted from anthropology by Gregory (1983) which provides another dimension for exploring the organizational context by focusing on the experiences of individuals within the organization. As Gregory (1983: 363) explains this understanding comes from, "the belief that meanings are linked to behavior". Therefore, unlike the integration perspective the differentiation perspective type studies explores aspects of the context, exploring individual and sub-group meanings, not just managerial ones to ascertain organizational improvements. Gregory (1983:364) also uses Becker (1982) to further explicate this perspective:

"People interact as if they shared culture. Through trial and error, sometimes through conversation and negotiation, they confirm whether or not their meanings are similar enough to get through social interactions appropriately. Sometimes their expectations are confirmed; at other times they break down, leading to further negotiation or even conflict. From a base of shared culture, people can negotiate new apparently shared meanings".

It can therefore be construed that **culture is a product of interaction**. This is why opponents of the integration perspective are emphatic about the need to explore phenomena from the individuals that create the context through their interaction and not solely from a managerial perspective and as Gregory put it are "hampered by pro-management assumptions". Of course, there are limitations and difficulties when choosing this perspective, such as the level of depth takes time to achieve, access to native views also takes time and the ability for the researcher to gain trust and understand the various language underpinnings that may be used by organization individuals. As Gregory (1983:363) points out that each language has a particular way of classifying experiences and thus describing these also in different ways; this heightens the level of complexity of the data to be interpreted (I will elaborate the discussion of language and communication in Chapter 11).

Van Maanen and Barley (1985) focus on the existence of subcultures in organizations and how it is important to reveal these stories, more so than presenting an integrationist perspective that seems perfect; where inconsistent stories are removed. In the process of organizing to the best of their ability, and create efficiency, organizations create bureaucratic processes that inherently divide individuals and their interests. Van Maanen and Barley (1985:39) state that "subcultures and the problems they pose are by-products of bureaucratization". In the search for increased efficiency organizations have created different strategies such as functionalization, specialization, automation, professionalization, standardization and specification, but these have a lasting impact on the development of subcultures in the organization. Furthermore, effects of internationalization, such as M&As, establishing R&D units in other countries, technological improvements, all play a role in what

²² For the purposes of this study the term environment will be limited to the internal workings of the organization.

Van Maanen and Barley call ideological differentiation, which occurs when the aforementioned strategies shift “interactional opportunities” that cause the way individuals interpret meaning creation and structures within their world. These shifts in interaction cause individuals to develop competing ideas on how to deal within their contextual realities. Van Maanen and Barley (1985:50) distinguish three variables for gauging the propensity of subcultural: 1) the extent to which subcultures’ boundaries extend in and outside the organization and 2) Prominence of a particular subculture and 3) Subculture member’s roles and identity affect how they conduct their work and also those who witness their work. While subcultures are important in understanding organizations, it is important however to mention as Van Maanen and Barley (1985:37) state that, “although our theoretical perspective suggests that organizations harbor subcultures, it does not preclude the possibility of a homogenous organizational culture, a situation where all members of an organization subscribe to the same normative order and where the normative order can be distinguished only by contrast to other organizations”.

9.7.3 Fragmentation Perspective

The fragmentation perspective contributes by providing organizations other ways of thinking than the traditional patterns of using culture in organizations (Alvesson 2002:11, Alvesson 1993, Martin 2002). While integrationist type of research such as Clausen’s (2006:50) provides a much more connected definition, “Organizational culture concerns the integration of symbols (logos), legends (stories about past successes and failures), heroes (influential managers or company leaders), shared experiences (projects) and values (business philosophies encompassing vision, mission, and objectives)”, it misses out on what does not fit. What happens to those puzzle pieces? Usually, they are removed from the overall assessment. Here the fragmentation perspective embraces the incongruities and the ambiguity.

We can begin with Weick (1987) that defines “presumptions of logic” or “general expectations” as structure and order in a given unknown situation, until it is further developed and the real logic develops. Weick (1987:225) states himself that, “Most managerial situations contain gaps, discontinuities, loose ties among people and events, indeterminacies, and uncertainties. These are the gaps that managers have to bridge”. He goes on to suggest that managers first conceptualize through the gaps and then after cognitively making connections and then this is followed by action.

Alvesson (2002:11) also explores these incongruities through what he calls the emancipatory approach that investigates, “the negative features of organizational life and helps to counteract the taken-for-granted beliefs and values that limit personal autonomy”. Key aims are focused on “Liberating human potential” and “Illuminating basic values and understandings with a view to counteracting ethnocentrism and broader, taken-for-granted cultural assumptions” (Alvesson and Deetz, 2000; Carter and Jackson, 1987; Prasad, 1997 in Alvesson2002:11). “It is important to acknowledge that culture is not just something that can be actively mobilized to make people think, feel, value and behave in accordance with managerial wants, but that culture frequently works as a source of employees’ resistance to managerial objectives and control” (Alvesson2002:11). Furthermore, exploring an individual’s or groups participation over time and how it impacts the dynamics and meaning creation of a culture can be of crucial significance to understanding the context. Martin (2002:328) adds for example, that a, “marginalized or deviant person who moves to the edge of a culture may be crucially important cultural member because he or she defines what is

“in” by being “out” or “almost out”. However, from an organizational perspective there is a willingness to dismiss individual emphasis for the greater good without acknowledging that further study of the outliers, these marginalized or misunderstood individuals (can apply to groups as well) may very well be keys to unlocking answers to current and future organizations issues.

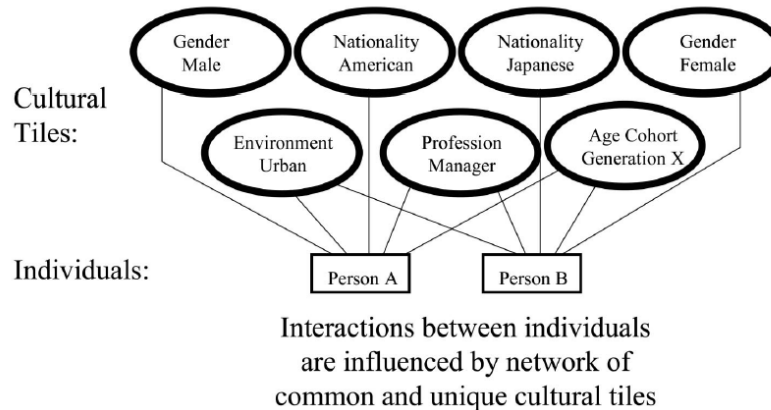
Hatch (1993) developed a model called *Cultural dynamics* that combines ideas from symbolic-interpretative perspective together with Schein’s theory, explicating the processes of culture through manifestation, realization, symbolization and interpretation that together according to Hatch form the dynamism of organizational cultures. While Schein’s model has provided much inspiration when examining organizational culture Hatch (1993) removed the hierarchy factor that focused on integration making it more dynamic and giving room for more of the ambiguity of the model to be uncovered. According to Hatch (1993:661), “the dynamic view recognizes both stability and change as outcomes of the same processes (cf. Herskovits, 1948)” not just focusing on creating integration but also providing the ability of exploring inconsistencies; all of the contextual manifestations. This theory does not discredit the work Schein, merely elaborates and welcomes the complexity through a more “process-based understanding” of the context of organizational culture. As Martin (2002:328) states, all these examples place focus on the “individual participation and how it can change outcomes, subjectively”.

While the theory of Cultural Mosaics by Chao and Moon lends itself to both differentiation and fragmentation perspectives, I choose to further discuss it here under fragmentation because of the flexibility of the interplay between cultural tiles and the significance of the individual to the system of the organization. Chao and Moon (2005:1129), “define an individual’s cultural mosaic as comprising three primary categories 1) demographic, 2) geographic 3) associative features of culture”; however, this belief is contradictory towards the premise of flexibility, differentiation and ambiguity inherent in their Cultural Mosaic’s theory. While either demographic variables (tiles) such as ethnicity, race (inherited from one’s parents) or gender, and age (physical traits) or geographic ones, these variables (tiles) seem given, I contest that they all can correspond as associative tiles. Associate tiles as per Chao and Moon’s (2005:1131) “represents all groups (both formal and informal) with whom an individual chooses to (associate and) identify with”.

While traditionally a person should only have a singular, identifiable demographic and geographic tile the whole point here is that individuals can indeed have multiple demographic and geographic tiles. For instance, I have Cuban, Danish and American demographic and geographic tiles and they work as associative tiles. Thus, associative tiles take precedence over demographic and geographic ones. I do not discount their existence only their significance in my present context.

More importantly however, is the significance of this theory for exploring and understanding individual’s culture significance and influence in networks. The figure below illustrates how individuals can draw on different cultural tiles to act and make decisions. As Chao and Moon (2005:1132) describe, “Unlike traditional organizational research, these levels (of complexity) are not neatly nested in individuals, groups, organization, and culture levels”, they are contextual. Exploring culture at the individual level through this theory illustrates the complexity of multiple tiles (variables) that can ‘coexist simultaneously as well as maintain their independence from one another’.

Figure 48- Illustration of the Complexity of Cultural Tiles



Source: Chao and Moon (2005:1133) *The Cultural Mosaic*

For any given situation an individual has access to different tiles in a variety of combinations to aid in understanding the situation and providing rationale and logic for determining the best course of action to take. The most important category from my perspective are those we choose for ourselves, e.g. associative tiles, those formal and informal groups that individuals freely associate and identify with. "Thus, even the most innocuous social groupings may reflect a sorting in effect of individual-level heterogeneity" (Levinthal 2007:190). Some examples of associative tiles that will be pertinent to this study will be but are not limited to: professional (as in education, expertise area(s), as well as types of motivators and/or interest groups within the organization. Moreover, I would add others such as tiles related to specific knowledge and experiences, for example, expatriates possess cultural tiles that are both specific to the headquarters of an organization as well as to other units they have worked at. This exposure, I believe, provides them not just both of these tiles sets but also cumulative tiles to draw from. I also take the liberty in this study to also label some demographic and geographical tiles as associative; for example, ethnicity and race (for commonly known as our national culture), where we live and work (urban vs. rural).

PART THREE- INFLUENCERS OF CULTURE & THEIR SIGNIFICANCE IN BUSINESS

9.8 Recap of Chapter- (Identifying why culture is significant to business)

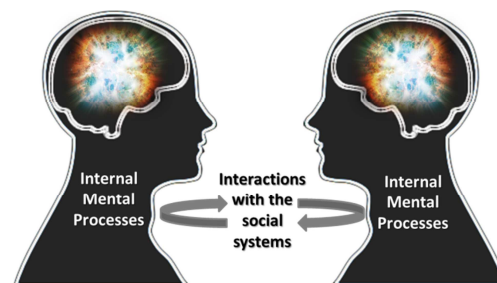
PART I of this chapter traveled back to present a review of the origins of the concept of culture. Here we explored and identified main definitions and influences of the three fields of study that had a hand in developing the concept. Thereafter we shifted the focus onto culture in organizations and again explored its influence in organizational life. This lead us to PART II of this chapter where the origins of organizational culture were explored and a review of the field of study was presented and discussed inline with the understandings gained from PART I. Here in PART III both understandings from PART I and II come together to discuss and present how culture is understood and will be used in this study.

This chapter began with the critical questions posited most often in business studies by positivists and economists alike—Why the focus on culture in an organization perspective? (Why the focus on culture?). This chapter deconstructed the concept of culture for the purpose of reaching depth of interpretation and understanding. Admittedly a long process, however, quite necessary both in line with the methodological underpinnings of this study but also necessary to provide clarity to business practitioners that have been lead by positivistic intergrationist theories.

There are two main reasons why the concept of culture is of relevant significance for business 1) the complex context and 2) meaning creation and understanding.

The contextual complexity includes geographical distance, cultural diversity, multi-dimensional management structures, knowledge sharing and knowledge flows (from an employee perspective) and managing knowledge (from a managerial perspective), reciprocity, individual (focus, motivations, mindset, aims and ambitions) and the organizational forms (groups, teams, networks, projects, functions and departments). All of these aforementioned factors are external (as in outside of the individual) in nature. The second reason why culture is significant for understanding an organization's business is because culture affects and is affected by the internal processes of individuals. Culture is also embedded in relationships through the creation of meaning and understanding in communication amongst individuals and groups of individuals.

Figure 49- Significance of culture in Business understood through individuals and their interactions



PART I highlighted the significance of the individual's cognitive understandings, it also highlighted the importance of values and how they drive our underlying assumptions. PART I also identified the three main differences between organizational culture and culture 1) organizational cultures are initially constructed phenomena with a specific purpose 2) the boundaries of an organization are more causal and are led by initiator interests and 3) organizations have an innate need to organize. PART II used these three differences to further explore the context of organizations and its influence on organizational culture. The most revealing, I believe, has been the need for organizations to organize and how that has affected how organizations understand, interpret and utilize culture. The "organizing" metaphor was also explored and its effects on culture briefly discussed in the business and organization theory. PART II reviewed the most relevant and applicable literature on culture in organizations through the lens of Martin's 3 Perspectives of Culture in Organizations—integration, differentiation and fragmentation.

9.9 Defining Culture & its Implications for this study

Given the discussions in PART I and PART II and what was highlighted as important aspects of how culture is defined in and out of organizations the following will be the guiding definitions and explanation of culture for this study. I define culture in organizations as:

contextually-dependent dynamics between individuals' cognitive and relational structures and the resulting and evolving understandings gained based on mutually constructed and enacted perceptions that come about through interaction.

To elaborate upon the definition above, culture can also be further understood through the additional points below:

- Contextually-dependent means that while individuals appear to have core values and cognitive maps that guide their choices, the context of a given situation is significant to alter preconceived understandings thought to be static in individuals. Context-dependency can be equated with a re-aligning or prioritizing of values given the situation and that also includes taking into consideration the risk and consequences. In the next chapter I will further explore, perception as it too, can influence how for example, the context can be understood.
- Dynamic means that the relationship between cognitive and relational structures is always "in process", and while one could take static pictures of the process to reflect upon them, the process is always in motion.
- Cognitive and relational structures are internal human processes that conceptualize the environment; responding to contextual cues and making assumptions/judgments in order to make sense of things that occur in our environment such as through our interactions.
- Mutually constructed does not mean that individuals agree on their interpretations and understanding of interactions. Simply put mutually constructed highlights that individuals need interaction to construct and reinforce their cognitive and relational structures; and this is done through interaction all of sorts.

Culture in organizations does not need to be fixed; it needs to be understood as part of the process of interaction. When considering the complexity of the context and the meaning creation and internal processes of the individuals, culture provides understanding through exploration of

manifestations (such as those listed by other scholars); manifestations of culture are expressions or snapshots of the *process of culture in action through the interaction of people with their environment*.

9.10 Influence of Culture in Business

It is the very influence that culture has on how organizations are built that creates a chain of events (observable or not) that affect the 'how' and the 'what' of an organization's actions. Both the above recap of [PART I](#) and [PART II](#) as well as the definition of culture described above focus attention on the influencing factors in the context as well as cognitive factors that are part of the makeup of the individual and that affect their interactions. Based on these realizations this section will explore the following 'influencers' of culture in business listed below. This [PART III](#) can in no way be exhaustive, it is aimed at acknowledging and discussing these five selected 'influencers' based primarily on the context and the emergent data of this study. Moreover, these discussions also serve as bridges, connecting possible discussions in the other chapters that explore networks and the individual and their interactions in more detail.

- Greater External Environmental context
 1. Globalization
- Internal Organizational context
 2. Forms of Structure & Networks
 3. Communication & Language
 4. Learning & Knowledge
- Cognitive & Relational context
 5. Meaning Creation & Understanding

9.10.1 Globalization- the Greater External Environmental Context

Robertson's (1992:8) definition for the concept of globalization as one that refers to 'an intensified compression of the world as well as one that increases 'our consciousness of the world'. While this definition is acceptable it is the thought process of compression and greater awareness that misleads some to mistake globalization for a unifier of cultures. In some ways globalization does bring us closer by means of air travel, and communication mediums, primarily television, the internet as well as mobile technologies. However, globalization creates an even greater infinite possibility of cultures. The possibilities are literally endless as to how people can choose to identify themselves across cultures. For example, photo-enthusiasts across the world can now share their work through applications such as Instagram. While we can accept that globalization has enhanced our connectivity however it does not mean that we are melding together. On the contrary, globalization while creating the illusion of close proximity has instead given individuals greater choices. We have an opportunity to explore other ways of living and thinking and compare them to our own; creating the possibility for hybrid sub-cultures. From a Cultural Mosaic perspective, the opportunity for expanding the amount of demographic, geographic and associative tiles is infinite as well as the potential in their combinations.

As Chao and Moon (2005:1128) put it, “the globalization of business is a reality that is redefining how people work together”. Globalization has created a situation where the concept of culture again resurges in business and is reevaluated in an attempt to better understand the linkages and how it impacts business relations. Cultural scholars such as Martin, Alvesson, Hatch, Holden, Claes believe that cultural dimensions such as those popularized by Hofstede and others are no longer enough to truly gauge culture in organizations. Boyacigiller et al (2002:3) also consider the effects of globalization on the study of culture; amongst them is diversity, more opportunity/choices, thus creating a greater complexity ‘challenge’ for researchers to find the best ways to conceptualize culture.

9.10.2 Forms of Structure & Networks- the Internal Organizational Context

Chapter 10 is entirely dedicated towards reviewing the concept of networks extensively; therefore I will not go into too much detail here, however, it needs to be briefly addressed. The structure is another element that is a precursor of what culture could be prevalent in an organization. The structure of an organization will be a significant determinant for how 1) people will behave, expect that they should behave, and expect to be treated (expect others to behave, 2) how processes will be applied and 3) how resources will be used. For the most part when discussing individuals (as in non-managerial employees) will for the most part acquiesce to the environment, structure being a significant part of that environment. Individuals do this in order to interact for communicating their needs, wants and/or emotions and to get affirmation of their identity (internal picture expressed by the external world).

Consider three classical organizational structure forms: Top-down, Bottom-up and Matrix structures. Top down structures have some common characteristics such as, hierarchical, strong top management control, less flexibility, and formal. While Bottom up structures show the following characteristics: strong consensus building processes, more flexible, less formal. Matrix structures are characterized by multiple decision-making points, efficiency, autonomy, more flexible but perhaps more power struggles due to more managerial positions. Organizations that use networks to facilitate work processes should also consider how culture impacts their organization. Networks are highly reliant on individuals and their interactions. It becomes of high importance to explore the relational aspects of individuals interacting in the network structures and how individuals communicate with one another. As I defined earlier in this [PART III](#), culture is the continuous flow of dynamic, non-linear processes of cognitive understandings enacted through the interaction between individuals’ various associative groups. In other words, culture is processed internally but enacted through interaction responding to contextual cues. Each of these types of structures is representative of different ways of doing business. These characteristics draw upon vastly different underlying values and interests; structures influence culture in business and as such should be further explored.

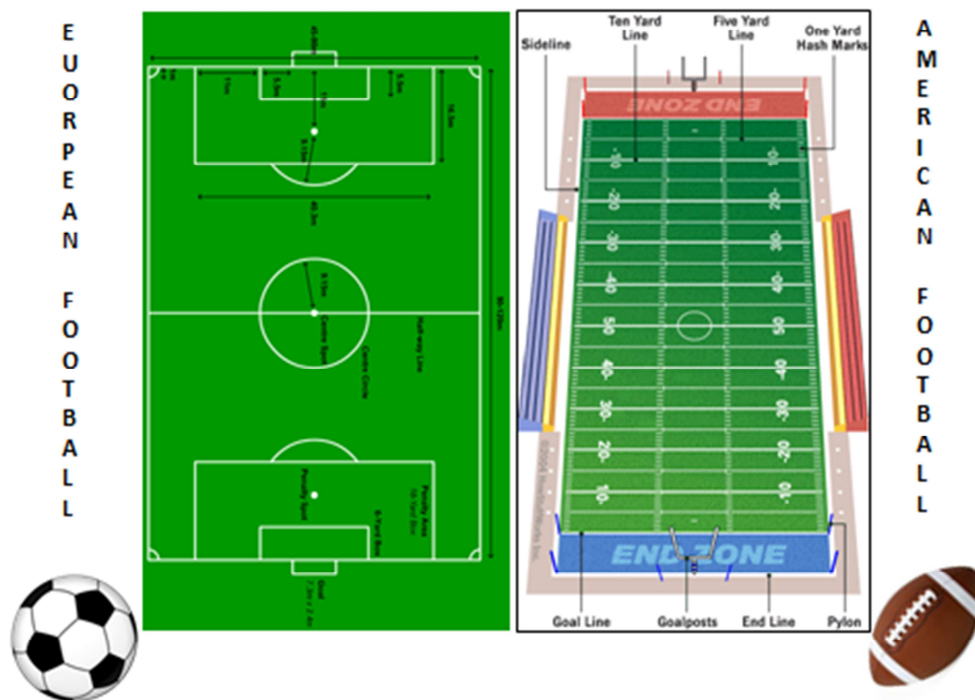
9.10.3 Communication & Language- the Internal Organizational Context

Communication is a challenge in general. When multiple cultures are added communication becomes more complex. While not the only mode of communication through the use of the spoken

language is by far the most common and widely used form of communication, next to writing. The language that is used, the meanings that are attached to the language that is shared and how it is understood can either work as a unifier or it can also create barriers towards meaning creation. "The use of language may represent the most visible yet the least understood influence on our worldview. It is through language that we formulate thoughts and that we experience the world and others." We communicate through shared language. When the language is the same but the countries vary it can pose a problem of assuming that we mean the same thing because we share a language (Schneider and Barsoux 2003, 44).

Sapir and Whorf (1941 in Lustig and Koester 1993:165-167) linked culture to language when coining the word *linguistic relativity*, which defines the specificity of language to cultural classifications that are only understood in said language. In other words, language helps individuals make sense or conceptualize their understanding of their environment and these understandings are not easily translated in other languages and thus cultures. For example (see the figure below), if the word "football" is used in North America it will automatically trigger a connection to the National Football League (NFL), however, if the same word were used in European (as well as some Central and South American and African) countries it would trigger a connection to another type of sport, also called "football" but that which North Americans refer to as "soccer".

Figure 50-"Football" - Language links to culture and communication



Source: Inspired by Bonsor (2004) and Grabianowski (2007)

Understanding the underlying meaning placed on the words, symbols and expressions we use assists individuals in co-creating common meaning; also knowledge. Feel free to disagree as long as you understand, we must first truly understand one another to work at our best together. Culture is therefore a key for creating synergies because it is through generating a common 'language' that will make working together more efficient. (In Holden's book) Usunier (1998:25) pointed out, 'language matters considerably, both English as it is the worldwide language of business, and foreign languages because they uniquely express culturally specific patterns in context-embedded situations, such as consumption or working relationships.' Additionally, Holden (2002:25) adds, "language [is so] unique to the human species yet so diverse in its structures, so variegated in its systems for encoding and articulating meaning, and reflecting a distinctive world-view." "Language is a reflection of our experience, but it also shapes what we experience" (Schneider and Barsoux 2003, 44). For these reasons it is also important to explore how individuals learn and obtain and share knowledge.

Communication and Language influence how we perceive culture. Communication can be defined as the way in which we express ourselves to others; our history, our wants, needs, our emotions. Language is the most common vehicle to communicate those things we desire to express. Therefore, if we do not understand, we cannot communicate. And if we cannot communicate, then we can go no further. Individuals need to interact to 1) develop, learn and 2) to acquire affirmation of the identity they share with others (the next two sections deal with these two influencers). It becomes obvious that communication and language have a significant influence on how we co-create meaning and develop culture.

9.10.4 Learning & Knowledge- the Internal Organizational Context

Through the course of this chapter many theories have been presented and discussions had on how individuals learn and acquire knowledge; moreover, the importance of this knowledge to how they process manifestations of culture for understanding, meaning co-creation and interaction. This reflection has epistemological and ontological tenants where individuals' underlying assumptions bubble up to the surface through their understanding. As I described in the Methodology chapter, "Epistemology is concerned with understanding (Crotty 2003:10). Our understanding is always built on top of our pre-understanding and prejudices". Ontology is concerned with how our knowledge is created and understood. How a person believes we should understand and learn will have a significant effect on how he sees the world (for himself, e.g. what he expects of himself) and what he expects from others around him. This is critical to how manifestations of culture are internalized, understood and how behavior is enacted from those internal processes; and this is how individual's learn and how they understand the process of creating knowledge affects culture in business. These topics will be further elaborated in Chapter 11 that reviews the literature for the Individual and their Interactions.

9.10.5 Meaning Creation & Understanding-Cognitive & Relational Context

Since 1979 when Karl Weick introduced the connection between sense-making and the organization there has been more focus on cognitive processes in organizations. This has been a great shift in business from the traditional cross-cultural management or comparative management of the 1970's and 1980's. The cognitive perspective is built on the constructionists paradigm where realities are

constructed or created to make sense of the world around us and the more complex organizational life became the more appropriate supporters of this academic school of thought became. Some scholars keen on maintaining the positivistic ground in organizational culture fear this focus on phenomenology, however the literature, specifically Schneider and Barsoux (2003:100) point out the importance of understanding and interpreting the underlying assumptions so as to understand organizational life better; in essence this understanding can reveal the 'nature of relationships'. Thereafter, it is also important to address the significant role of the individual in organizational culture.

9.11 Chapter Summary

At the onset of this review I posed several questions, questioning the reason why we should consider culture in a business perspective. In summing up this literature review, information presentation and knowledge acquired I would like to make sure to address some specific points: paradigm shifts address the increased complexity of the business environment; significant changes in the business environment are addressed with new developments in the literature as expressed with discussing globalization, cognitive perspectives, communication and language and learning and knowledge. Lastly, a focus on individual's and their interactions in business, knowledge networks creates a unique culturally contingent environment where mutual orientation and reciprocity will help collaboration/cooperation efforts.

The three part analysis of the culture concept that has been reviewed in this chapter has been done so with the aim of gaining a better more thorough understanding of what culture is and why culture is *significant* for navigating complex business structures' continuously changing and demanding terrain such as that of multi-national intra-organizational knowledge networks in growing MNCs.

In PART I the review dealt with the origins of culture in anthropology with extensions into other study areas such as sociology and psychology. Here, an awareness can be gained about the underlying assumptions found in all humans. Kluckhohn and Strodtbeck (1961) provided five key areas that many other scholars have used to further develop the concept of culture. When reviewing the literature to understand culture in organizations we discover academic guidelines or underlying assumptions (that have come to also be known as bias to some, usually the minority groups) that set the tone for how the concept is studied. These are 1) ontological considerations or how social reality is perceived, 2) objective vs. subjective considerations and 3) how scholars perceive human nature. Furthermore, it was also discovered that in reviewing the literature five culture themes could be identified in the organization theory study area.

In PART II the review takes the revelations of PART I, namely how scholars study the concept of culture, 2) how the concept is depicted in the literature and 3) the linkages between the origins and the business literature and examines organizational culture from its origins as organizational climate towards main developments through the 20th and 21st centuries. Most revealing was seeing the evolution from macro dimensions categorizing nations and regions towards more meso, micro focus on concept of culture manifests and what this means in and to the organization. Interestingly enough PART II ends with a section discussing metaphorical connections to culture and organizations and how the concept of culture has been organized in organizations, i.e., national vs. organizations; subcultures and professional cultures.

PART III of the review is a cumulative interpretation of how the concept of culture has evolved and where it is heading towards in complex organizations. The discussions cover some significant shifts in the business world such as globalization, a focus on cognition (and this is partly due to the need and demand for knowledge and innovation). Lastly, PART III discusses the importance of communication and language and of learning and knowledge.

How culture manifest itself in organizations is closely tied to perspectives that stem from underlying assumptions that on an individual level stem from the identifications and connections for understanding our environment, primarily made at an early age but they continue to develop on into adult life. At a network level they stem from the interactions, understandings, and behaviors. Mindset changes are still needed... Those that think in a positivistic perspective have a difficult time understanding the need to focus attention on network relations, individuals and their interactions, knowledge flows, etc. The aim of digging deeper is done in the pursuit of becoming better at what we do; acknowledging what works and learning how to improve what does not work. The process in and of itself is the ambition of continual learning and growth.

There have been many arguments against organizational culture models that “oversimplify complex phenomena”, however as Hatch (1993:658) states they serve an important role in guiding empirical research and generating theory. It is also important to remember that it is indeed the changing contextual environment that challenges the staying power of such theories; time has tested many of these theories causing us to continuously evaluate not just the models and theories but their underpinnings. For while Hatch does make a good point, it is also important that the foundations of models and theories we use to further extend theoretical developments and conduct empirical research are not flawed otherwise we have gone very far erroneously. By exploring not just an integration type of perspective we are able to explore not just the ideal but also the actual regardless of how diverse and/or ambiguous it may be. These insights will provide organizations with more than just superficial results. Yes, there is the risk that some challenges will be exposed that the organization may not be prepared to tackle. But the awareness of these and how they will tackle them will surely influence how they achieve their future ambitions.

These shifts in the business environment create a need to explore inter-disciplinary linkages between *modern culture literature* and other cognitive process areas, e.g., knowledge flow, modern organizational structures such as networks, or the impact/influence of the individual and their interactions within the organization, all which are important examples that aid in sculpting organizational life.

CHAPTER 10- Literature Review—Networks

10 Introduction

Networks are an incredibly important aspect of international organizations, specifically when expanding R&D activities it becomes critical to develop strong networks that can sustain the long term aims for strategic developments. In this study the concept of Networks has also been identified as one of the three components influential in/for collaboration processes. From an organizational perspective networks are important because they facilitate collaboration throughout all organizational structural boundaries e.g. functional, social, cultural, professional groupings. The literature on networks is much like the literature on culture; interests and contexts have greatly developed research in some areas but it has also created gaps that need to be further explored. The conceptualization of networks is also an important aspect for understanding the relationship between the three main components that have been identified based on the data. As discussed at the introduction of the study the data has called attention to three components of collaborative processes: *culture, networks and individuals and their interactions*. Thus this review of networks is indented to explore, very specifically networks; how they are **defined**, how they are **used** in intra-organizational business networks where knowledge sharing and knowledge emergence is vital to achieving innovation. Also, it is important to explore the **interplay** of the three components.

In order to best undertake this review, this chapter is divided into three parts. PART I will explore the three approaches most commonly associated with conceptualizing networks in business theory: 1) structural, 2) relational and 3) cultural. PART II briefly reviews the following social aspects of networks: 1) individuals in networks, 2) networks as interactions, 3) relationships, 4) forms of social governance such as trust and power²³, and 5) knowledge in networks. PART II is written in an explorative way and is not meant to be exhaustive rather it is meant to focus on capturing aspects of the extant literature that resonate with what is happening in the empirical world. The aim with PART II is to attempt to detach myself from the three typical approaches and identify new insights that have not previously been addressed. Based on insights gained in PART I and II, PART III defines networks and makes sense of all the information presented for the purpose of this study.

Based on the methodological journey of induction and iterative cycles I find that while I wish to refrain from fully conceptualizing networks until PART III, I do however have a preliminary understanding that colors how I perceive networks and I believe it is important to be open about it here; I see networks as an ‘interlocking web of human interaction’, all actions and reactions are linked.

²³ Forms of governance may not appear to be social characteristics, however reviewing the data and literature has shown that the types of governance forms that appear in networks (due to its social nature) are very much related to the social; as the section illustrates the examples are trust and power.

PART ONE- THREE APPROACHES TO CONCEPTUALIZING

NETWORKS

In exploring the literature based on my continual data analysis it became evident there are three prevalent approaches for conceptualizing networks in business. I found the work of Todeva (2006) specifically insightful as she brings together a comprehensive, presentation of networks in business and is also most closely in line with my understandings and conceptual framework based on the data collected in this study, however, there are some considerations.

Todeva (2006:3) does explore business networks from an integrationist perspective when she considers them to be 'bridges' that function "between social and economic dimensions of human contact, between different disciplines and methodologies, between the academic community and the world of practice". It is important to consider that networks also contain chaos, heighten levels of complexity, inconsistencies and ambiguity, all which, I believe are a part of their success. Moreover, Todeva (2006:5) states that networks, "instigate flexible decentralization of power combined with focused decision-making", I would argue that it is vital to keep in mind that while networks create a flexible environment contrary to traditional top down hierarchical organizational structures, the very same flexibility heightens complexity and can cause decision-making to become convoluted (intertwined) in complicated intra- and interpersonal conflicts. Network structures that become bogged down with indecision and politics can halt the flexibility and effectiveness of networks.

Todeva (2006:16) sees as I have that are three important aspects to business networks: structural, cultural and relational, what she calls the 'three building blocks of business-network analysis' that "are fundamental to building a coherent body of theories and methodologies". She also notes however that they "do not offer a clear direction for future research" and this is why Todeva (2006:2) also focuses on three complementary levels: "the level of actors, the level of relationships and the level of the entire network configuration or network structure". Together all six aspects create what she refers to as the Network Diamond. Taking into account the evident similarity between components unearthed by the data and the theorizing by Todeva, I will be using her framework as a guide for my review of the literature on networks.

10.1 The Structural Approach

The most basic and simplified idea of a network structure is that of connecting different groups, individuals and/or organizations with one another in order to work together to fulfill a mutual benefit. "The fundamental concepts in network analysis are actors, relational tie, dyad, triad, sub group, group, relation and network" (Wasserman & Faust, 1994 in Parkhe, Wasserman and Ralston (2006:561). However, networks are complex structures of multi-leveled relations; the larger the organization the more complex maintaining these relations become. Generally speaking the literature in this approach focuses on groups or organizations in the context of macro studies where large network structures are examined for centrality and strength of ties. The structural theory of action posited by Burt (1992:329) focused on three aspects of networks: 1) action, 2) actors and 3) context. Todeva (2006:23) summarizes these aspects as such, "A chain of actions results in a process of interaction and constitutes a set of relationships between an actor and its partners. Social network analysis treats purpose as equivalent to self-interest, and both are assumed to be present in

a relationship. The marginal utility of an action and a relationship is also assumed as constant, varying only by the structural position of the actors". Ronald Burt²⁴ was more interested in capturing snapshots of large networks, exploring position and its link to the power and reach actors have in the network. His theory stems from the idea of capturing a picture of who are the most central individuals and what are the strongest links in the network at the moment the social network analysis is conducted. "Viewed in this way, behavior is interpreted "in terms of structural constraints on activity, rather than in terms of inner forces within units" (Wellman, 1988: 20), a point echoed by Burt: "People and organizations are not the source of action so much as they are the vehicles for structurally induced action" (1992: 5)" (Parkhe et al 2006:561). From the structural approach, "relationships emerge from attempts to utilize resources in order to realize interests. Interests emerge from the already existing division of labor (or status/role-set) that position each individual vis-à-vis the other members. The status/role-set determines the structural autonomy of the actors, ignoring variation in individual attributes of these actors" (Todeva 2006:23).

Because much of the research on network analysis is based on the structural approach, "there is a consistent criticism that the network approach is focused on techniques and statistical models and neglectful of the ways in which micro-level structure connects to 'any larger substantive part of social life' (Granovetter, 1979:507-8)" (Kilduff and Tsai, 2009:67). Another key name in the development of the structural approach is Granovetter (1973) who posited the importance of ties in networks; he introduced the concept of strong and weak ties. Strong ties are represented by close relations such as family and friends, e.g. more trustworthy, credible and accessible, while weak ties are represented by professional contacts and acquaintances. "Strong ties result in highly cohesive units; however, new and diverse information is more likely to come through weak ties from acquaintances" (Novak 2008:45). Granovetter argued that the strength of dyadic ties made an impact on "diffusion of influence and information, mobility opportunity, and community organization" (Granovetter 1973:1360). While Granovetter (1973) acknowledged the importance of social relations in networks it was from a purely sociometric perspective; his theoretical stance rested on the strength and weakness of ties and not on their content or context. According to Granovetter (1973:1361) the strength of weak ties can be summarized as the combination of the amount of time, emotional intensity, intimacy and reciprocity found in relationships. Granovetter bases his logic on evidence that "the stronger the tie connecting two individuals, the more similar they are in various ways (Berscheid and Walster 1969, pp.69-91; Bramel 1969, pp.9-16; Brown 1965, pp.71-90; Laumann 1968; Newcomb 1961, Chapter 5; Precker 1952)" Granovetter 1973:1362) (this is reminiscent of the associative ties of Chao and Moon 2005 discussed in Chapter 5). Weak ties are not the primary groups in a social structure. Weak ties can be compared to two of three concepts in Martin's culture perspectives theory (see Chapter 5 section 5.6); differentiation and fragmentation, as an "emphasis on weak ties lends itself to a discussion of relations between groups". "Weak ties (Granovetter 1973:1373):

- Are an important resource in making possible mobility opportunity
- Effect social cohesion
- Work as possible bridges between more coherent groups

²⁴ Burt is also known for conceptualizing structural holes as opportunities for obtaining new knowledge and developing new links.

Maintaining weak ties is important aspect of networks (Granovetter 1973:1373). Not all weak ties are made the same and while they all have opportunity to become bridges, not all are or do. However, all “bridges are weak ties” that connect the empty spaces between groups. A bridge is a “line in a network which provides the only path between two points (Harary, Norman and Cartwright 1965, p.198)” (Granovetter 1973:1364) (the concept of a bridges here resemble the concept of boundary spanning developed by Wenger 2003; Tushman 1977 and Tushman et al. 1981). Granovetter (1973:1365) also discussed the aspect of *critical distance* which meant that after a certain amount of ties the messages exchanged would be too costly or distorted and not worth the trouble. However, critical distance in this respect is no longer a technological issue with advancements in communication mediums. Moreover, understanding one another and clearly communicating our points across time, cultures and context can cause distortions.

One last aspect relevant to the understanding networks that I want to address under this approach is that of social capital. The concept of social capital originates from the work of social workers and sociologists when studying communities they realized that “strong, cross-cutting personal relationships...provided the basis for trust, cooperation, and the collective action in such communities” (Jacobs 1965 in Nahapiet and Ghoshal 1998:243). “The notion of social capital underlies the network concept” (Putnam 1993 and Fawcett et al 2000). The central proposition of social capital theory is that “networks of relationships constitute a valuable resource for the conduct of social affairs, providing their members with “the collectivity-owned capital, a ‘credential’ which entitles them to credit, in the various senses of the word” (Bourdieu 1986:249 in Nahapiet and Ghoshal 1998:243). According to Novak (2008:44), “one of the ways that social capital is created is through the concept of brokerage²⁵.” Novak (2008:44) reviews Burt’s (2005:61) “four levels of brokerage through which a person could create value” (for more on these see Burt 2005):

1. Actors make others aware of information
2. Transferring best practices across structural holes
3. Draw analogy between groups ostensibly irrelevant to one another
4. Synthesis of ideas from different groups

Thus, according to Burt and other structuralists value is created through “variation and new information”. The concept of social capital will be further explored and expanded upon in the next chapter on the individual and their interactions under PART II called Interactions, as I want to explore social capital from the perspective of the individual in interaction and not with a focus on structure.

While I recognize exploring the structure of networks is relevant for understanding aspects of network dynamics I do not follow the structural approach as to do so would be at the expense of a deeper examination of the actors and their interactions. I agree with (Todeva 2006:206) when she clearly states, “actor’s motives and strategic choices along with the environmental constraints and opportunities as drivers for the interactions in business networks are essential in the analysis of business partnerships”. It is also acknowledged by network researchers that there is an issue with establishing network boundaries. Moreover, some of the disadvantages of such an approach are that

²⁵ Brokerage is a term in the structural approach posited by Burt (2005:11) to mean how individuals interact and navigate the social structure.

research remains superficial; there is no thick description or depth. "The limited use of actors' attributes and relational characteristics is one of the limitations within the structural approach, where relational and actors' diversity and heterogeneity are ignored" (Todeva 2006:207). I believe it is important to focus on the individual and their interactions specifically because the potential depth that can be reached in studying the organization at this level of analysis would be missed using the structural approach. Specifically in complex knowledge networks people are part of the source of action and they should be understood. The next sections review the relational and cultural approach, respectively.

10.2 The Relational Approach

The relational approach is heavily based on the work of the IMP group at Uppsala University. Håkansson and Johanson (1992) in Johanson (1994:153-158) developed the most widely accepted model representative of the relational approach. The A-R-A Model describes three basic overlapping networks: actors, resources and activities, within a network. The network of actors is representative of dyadic relationships. The network of resources flow across the network of actors and the network of activities is the participation of the network of actors (Todeva 2006:26). Actors dominate both activities and/or resources through the development of exchange relationships. Actors here are representative of super and sub systems (prevalent metaphors and allegories have contributed to a systems thinking of the organization's structure and function, however, this is not a realistic picture of organization life) or in other words, not just individuals but also groups of individuals, parts of firms, firms, and groups of firms. "The interaction process in business networks is operationalized as a dyadic relationship between interacting actors and the episodes of interaction, including exchanges of resources, products, services, and information or financial payments" (Todeva 2006:25). The Uppsala model is very much directed towards inter-organizational networks in the internationalization process with specific focus on "supply networks and industrial markets". The model was developed in the context focused on managing market resources. The environment, "is conceptualized as comprising the market structure, the market dynamics, the position of each firm in the value chain, and the buyer-supplier relations in complex situations" (Todeva 2006:25-26). "Overall the relational approach acknowledges the [interdependence and] multiplexity of links between actors, events and resources" (Todeva 2006:26), however, it remains that "social structure and that the individual attributes are not taken into account" (Todeva 2006:30). The gap that remains in the relational approach is still the need to identify what determines strategic intent and what leads to network behavior. Nonetheless Johanson and Mattsson (1992) do acknowledge that human actors have intent and thus can make strategic choices (Todeva 2006:29). However, according to the relational approach, it is the focus on resources and how to gain control over them that dictates the actor's activities in the network. Therefore, control becomes a 'function of knowledge'; whoever has the power to yield it to their will, will have the most control over resources and thus influence relational exchanges in the network. If networks have memory capability and actors are vying for control of resources then according to this model actors are goal-oriented, strategic in their choices/behaviors.

According to this model created by Johanson et al (1994:158) the following four forces are of great importance when looking at networks relationships:

1. Functional interdependence
2. Power structure
3. Knowledge structure
4. Intertemporal dependence (its invested history that includes memories, relationships, knowledge routines, etc.)

The Network model for industrial markets focuses on the control of resources; however there should be *more focus on the longitudinal cumulative process since networks have intertwined intertemporal as well as relational dependencies*. From a macro interfirm network perspective the legitimacies of relationships and the investment in one another may not be as relevant as in the case of intra-firm networks; naturally governed by a greater influence of all four forces listed above. Johanson et al (1994:126) also suggest four aspects of interaction: 1) capabilities- "what can you do for me?", 2) mutuality or social relations- "How do you see me?", 3) particularity or how we characterize the interaction- "What are you prepared to do for me, compared to what you do for others?" and 4) inconsistency or ambiguity- "Which variations are there in these "whats" and "hows"?". Basically, it is through the process of interacting and questioning what we as individuals can and cannot do for one another that we identify each other's capabilities (this process builds perceptions of what others can really do for us vs. what they think they can and through the sharing of this process, we together build up or tear down others' reputation). Capabilities go hand in hand with mutuality, or the purpose of having mutual interest or common goals. While mutuality can be freely given, it usually takes time to develop and is highly related to building up trust. Particularity is what I would refer to as context. Johanson et al (1994:130) state that particularity is strongly influenced by the "specific situation or wider network in which it takes place". This also refers to the interdependence of complex situations that Weber and Khademian (2008) call "wicked problems" due to the level of complexity and interrelatedness. "Inconsistency is an important but [often] neglected aspect of interaction" (Johanson et al 1994:127); going against the organization and managerial grain but nonetheless much attuned to the realities of organizational life. These four aspects of interaction are closely related and help us better understand how we interact. If one were to consider these four aspects of interaction then the table below can provide examples for understanding the processes of action and interaction amongst individuals in networks.

Table 16 Examples of Action & Interaction based on the Four aspects of interaction (UPPSALA)

Examples of Action & Interaction based on the Four aspects of interaction (UPPSALA)	
The fusion between capabilities and function in the interaction	<ul style="list-style-type: none"> • Level of expertise • Level of seniority • Level of social governance (power, control, influence, etc.) • The duration and purpose of the relationship
Social relationships/mutuality (the sharing of common goals or interests)	<ul style="list-style-type: none"> • Can be governed by <ul style="list-style-type: none"> ○ self-interest ○ joint interests of a third party ○ interest in each other's well being
Direction and uniqueness of the relationship	<ul style="list-style-type: none"> • the interconnectivity of parties with others
Inconsistency; prevalent in the network/interactions	<ul style="list-style-type: none"> • Understood as the lack of clarity or ambiguity • Important for change and development

Source: Adapted from (Johanson 1994) pg126-127

The key in building relationships through the eyes of these authors is with respect through mutuality. A mutual orientation is significant in the exchange/adaptation processes for relationship building. Johanson et al (1994) highlight the importance of adaptation in their network model by the following three reasons:

1. Adaptations strengthen bonds (between firms).
2. Adaptations reinforce relationships
3. Adaptations indicate space for change in the relationship

Holistically speaking, Johanson et al believed that through the presence of adaptations in the interaction process there was a greater opportunity for the development of mutual orientation.

Finally Axelsson and Johanson (1992) in Johanson (1994:208) discuss three issues of critical importance in networks:

1. Orientating-transparency in the network
2. Positioning- influence
3. Timing- ability to strategically see potential for opportunities

The transient and tacit nature of relationships and personal experiences in networks can create a thick haze for individual actors to make sense of what other actors are doing; thus making it difficult to find orientation in a network. As Johanson et al state, "Actors have fairly clear views of their own relations with, and dependencies on, other actors and of some relations of these actors to third actors although these are generally much vaguer. The views of more distant parts are unclear."

In organizations, positioning historically speaking was pretty straight forward; you just had to 'climb the corporate ladder'. In network thinking finding your place in the network can be deceptive. Relations are not only based on who you are superior or subordinate to but other types of

relationships become key. Knowing how to be able to see opportunities and how to proactively seek the best connections is about having the best timing. According to the authors, it is 'preparedness' and not 'planning' that is important here; adaptability. Here, I would argue, individuals need both, having a plan but being flexible to navigate unforeseen changes; that's adaptability.

The relational approach while embracing the diversity that exists in the networks of relationships amongst individuals focuses on the, "strategic decisions and choices to be the main driving focuses that frames business network interactions" (Todeva 2006:208) still focuses more on the formal aspects of these relationships, such as, contracts and legal obligations. The following section deals with the cultural approach that focuses more on the complexities of the individual; focusing on cultural artefacts such as knowledge, norms, stories that helps frame interacting contexts in networks.

10.3 The Cultural Approach

"Networks are not only channels of information and influence, but also channels of meaning—webs of signification (Geertz, 1973)—into which ideas are introduced and subsequently defined, developed, validated or corrected. From this perspective cultural change is a function of network complexity not hierarchical position: seniority alone does not confer the necessary power to effect cultural change" (Bate 1999:190). The cultural approach, "focuses on the experience of network actors as cultural participants, that is acting, interpreting, and imagining networks—through language, symbols, myths, stories, rituals and other processes of human action and imagination" (Todeva 2006: 30-31). Like the relational approach the cultural approach also explores the significance of the individual but as the name suggests, it focuses more on the culture aspects that appear to be ignored in the relational approach (Lowe 2001). According to Todeva (2013) Lowes' criticism of the relational approach is directed to the narrow treatment of culture and the attempt to frame culture as a rational choice phenomenon, rather than an ideational one. The emphasis of the ideational approach (which is best represented under the actor-network theory, but more adequately treated in the semantics and semiotics literature), is that every individual action is subject to interpretation, framing, social comparison, and other processes that enable the actor to derive at a meaning for this action". Kilduff and Tsai (2009:67) also acknowledge that in order, "to understand how structures change over time, the analysis of individual actor attributes, motivations, cognitions and behaviors in actual social contexts such as organizations may be helpful" (The proceeding Chapter 11 will review the literature specifically for orientation of understanding the individual in intra-organizational R&D knowledge networks).

One of the main strengths of the cultural approach is 'focus on heterogeneity of actors and the processes that takes place in a network' (Todeva 2006:32). "Further, many of the ideas central to network theory, including status, prestige, influence, cohesion, hierarchy, legitimacy, power, trust, and social capital, are deeply rooted in a country's host culture" (Parkhe, Wasserman and Ralston (2006: 563). Host country culture is comparable to the role of the founder discussed in Chapter 9 section 9.5.1 *The Context of Organizations & Its Impact on Organizational Culture*. Moreover, culture in its many forms is always present in human interaction whether we are aware of it or not. It is essential to consider the impact of culture on networks and how it influences relations and the interactions of these. "The cultural perspective refers to networks as living *systems* that can invent themselves, that can modify their relationship structure and can *manage* their internal and external

environment” (Todeva 2006: 31). If we explore networks only as systems then we assume that inconsistencies or ambiguities imply error to the system and that these “errors” need to be removed for the system to return to proper operating status. The above excerpt makes it seem that networks are systems that can be managed down to robotic precision. And I fully agree that individuals in networks can modify their particular relational structures, I do not agree that networks as such can ‘manage’ their environments. The treatment of networks as systems and the assumption that they can manage their environments stems from the integrationist perspective of culture. Here we can see its persuasiveness in crossing over to other concepts. As discussed in the previous Chapter 9, Martin (2002) emphasizes the importance of retaining a wider scope when treating culture so as not to be blinded by one perspective. It is in examining all aspects that can lead to uncovering the underlying issues that plague the organization.

“The cultural perspective acknowledges the existence of cultural artefacts, their direct impact on human interactions and relationships, and the spontaneous emergences of new structures and new forms of behavior” (Todeva 2006:31). The cultural approach critiques the structure and relational approaches for the lack of focus on the individual and more ideational aspects of culture, respectively. “Theories that posit the overriding importance of structure for the collective understandings held by members of a group discount the potential autonomy of cultures created through interaction and interpretation” (Frost et al 1985, 35). Thus, the aim of the cultural approach is to focus on the process of interaction, revealing the driving forces underlying interactions in context so as to a free space for autonomy and adaptability.

Many of the concepts in the cultural approach are borrowed from the Actor-network theory (Latour 1987; Callon 1986, 1992; Law 1986, 1987); the focus on individuals, on their interpretative capabilities that shape their world and “the process of change and evolution in networks as facilitated by the evolution of ideas that emerge as part of the networking practice” (Todeva 2006: 30 on reviewing the cultural approach) are just a few, therefore next I briefly review key aspects of the Actor-Network theory most applicable to this study.

Actor-Network Theory “also known as the sociology of translation – is concerned with the *mechanics of power*” has struggled with misunderstandings of both meaning and ontology (Law 1992:380). Initially introduced by Callon, Law and Rip (1986) the main intent was to change the prescribing notion that one perspective, such as, Western society knowledge, could be blocking human ability to completely understand the world (Law 1992).

From Callon’s perspective both human and non-human actors can participant and influence networks. Human actors can exhibit strategic behavior; they position themselves in networks, what he called staging and framing. However, I would argue that while human actants can position themselves, ‘stage’, it is dependent on the interactions in the network that will dictate if they will remain where they position themselves and others (a discussion about roles and status is taken up in Chapter 11 PART II, section 11.6.2). Callon’s (1986) conceptualization of human actant’s strategic behavior places too much control on how interactions are enacted in networks and seems to lean towards functionalistic perspectives and moves the cultural approach away from the diversity as well as ambiguity discussed throughout the culture chapter. Callon posits that while non-human actants cannot exhibit strategic behavior, however, they can “act as spokesmen representing their contexts and bringing their attributes to the actor-world” (Todeva 2006: 32). Thus, one of the main

criticisms of the actor-network theory is that it overly empowers non-human actors with the ability to organize, and frame networks, misplacing the role of the human actors (Todeva 2006:34). For instance, knowledge and power have a 'dual existence' in a network: "they exist by themselves with their own properties, and they exist as enrolled, incorporated, mobilized or absorbed by the network, with ascribed roles and functions" (Todeva 2006: 31). However, I agree with Todeva (2006:78) when she states that, "it is important to say that texts, technologies and other cultural artefacts may carry powerful frames that condition human behavior and strategic act. This power, however, derives from the human imagination that has created these entities and from the institutional framework that supports particular economic and social-cultural practices". Put simply, the power derives from perceptual and contextual forces. It is important to denote that without human actants, non-human actants could influence nothing; "only human actors can select technologies, interpret texts, ascribe roles" (Todeva 2006: 78) and take action to achieve specific objectives. For example a network can have a powerful focus on innovation; however innovation in of itself cannot create or influence networks—only through the thoughts and discourse of human actants with one another, and human influence can innovation effect networks. Thus as Todeva (2006:34) states, "the power of non-human actors derives not from their will and choices, but from their attributes and from the network effect of their application by human actors". Outcomes and instruments are also important elements of actor-network according to Callon. While outcomes are self-explanatory, instruments need further explanation. According to Callon instruments assist in providing objectivity to what could be otherwise seen as a compilation of actor interpretations. Todeva (2006:32) cites texts and rules as two examples of instruments. In other words, instruments are elements that are made objective through agreement (consensus) by interacting and negotiating human actors.

"One of the main advancements to network theory brought by the cultural approach is the notion of *network processes*, such as selection of partners, their enrollment in the network, the translation of network rules and properties of the network actors, the staging of activities and interactions, the representation of interests and viewpoints, and the overall framing of the network dynamics" (Todeva 2006:208). Since one of its main strengths is the focus on the diversity and since this approach focuses on both human and non-human actants, the *network context* becomes 'an essential element of the network analysis'. More practically, Johnston, Gregory, Pratt and Watts (2000) argue that it can be used as a means of producing a better understanding of the twists and turns of both technology, nature, society and their inter-connectedness; in other words the network context.

Table 17- Overview of Three Approaches to Networks in Business

	Definition of networks	Focus area	Understanding of usage of networks	Understanding of relationships	Understanding of the individual	Scholars
Structural Approach	networks are complex structures of multi-levelled relations; focus is on the ties between nodes and the strengths of these ties.	focuses on groups or organizations in the context of macro studies where large network structures are examined for centrality and strength of ties.	capturing snapshots of large networks, exploring position and its link to the power and reach actors have in the network.	relationships emerge from attempts to utilize resources in order to realize interests.	People and organizations are not the source of action so much as they are the vehicles for structurally induced action	Burt (1982) Granovetter (1973)
Relational Approach	the relational approach acknowledges the [interdependence and] multiplexity of links between actors, events and resources, however, it remains that social structure and that the individual attributes are not taken into account	<ul style="list-style-type: none"> focused on managing market resources through inter-firm relationships it is the focus on resources and how to gain control over them that dictates the actor's activities in the network 	directed towards inter-organizational networks in the internationalization process with specific focus on "supply networks and industrial markets".	"The interaction process in business networks is operationalized as a dyadic relationship between interacting actors and the episodes of interaction	<ul style="list-style-type: none"> Actors dominate both activities and/or resources through the development of exchange relationships. human actors have intent and thus can make strategic choices goal-oriented & strategic 	UPPSALA Team with Johanson 1994
Cultural Approach	networks as living systems that can invent themselves, that can modify their relationship structure and can manage their internal and external environment	focus on heterogeneity of actors and the processes that take place in a network	focuses on the experience of network actors as cultural participants, that is acting, interpreting, and imagining networks—through language, symbols, myths, stories, rituals and other processes of human action and imagination	Understandings and interactions are based on different types of relationships are explored not just dyadic	to understand how structures change over time, the analysis of individual actor attributes, motivations, cognitions and behaviors in actual social contexts such as organizations may be helpful	Callon, Law and Rip (1986) (Law 1992) Kilduff and Tsai (2009)

Source: summarized from the review presented above

PART TWO- DECONSTRUCTING & EXPLORING SOCIAL

CHARACTERISTICS OF NETWORKS

PART I above presented three of the most common approaches used to understand and analyze networks. None of the approaches truly explores the individual and this is partly because in the context of organization theory the main purpose of researching networks was and has been for creating efficiencies. Moreover, organization research has been infamously positivistic, and economically driven. However, many aspects of our world have changed how we conduct business. More and more it is recognized that individuals are of great importance, especially when exploring complex networks and organizations. Static pictures of organizational life like the ones presented through a structural approach are not enough, specifically in an international R&D setting where knowledge and collaboration are necessary for exchange processes. Even some structuralists admit that strictly exploring network structures is not sufficient for understanding the underpinnings of how and why things happen. From a structural approach individuals are reduced to nodes, however, nodes are people and it is important to research these to gain a better understanding. As Kilduff and Krackhardt (2008:264) write “nodes are constituted in part through their relationships with others in the network, but they also bring to any particular network idiosyncratic network expectations and perceptions. *Thus, network stability and change involve both patterns of interactions within the overall network and the idiosyncrasies of the network actors in terms of their cognitions, personalities and expectations regarding the social network*”.

“Activity structures are formed by the views of the involved actors as to how the activities should be delimited, and how they are related to one another. The structures are, in other words, constructed by actors (cf. Berger & Luckmann, 1967)” (Johanson et al 1994:213). “The sociological view of the firm perceives the organization as a collective actor comprising individuals, bound with formal and informal ties, and carrying subjective views, intentions, evaluations, and decision-making power embedded in culture and institutional norms” (Todeva 2006:85). I would agree but would call it a collection of actants/individuals not a collective actor as that implies assimilation and homogeneity. “Every single activity within a network is dependent on other activities in the sense that the outcome of an activity is dependent on how other activities are performed” (Johanson et al 1994:213) (what Stacey 2007 calls interdependence). Here activities can be deconstructed into actions and interactions all of which are enacted by human actants. There should be some clarity regarding non-human actants as was reviewed above; non-human actants do influence networks, however, only through influencing human actants. I find that both the relational and cultural approaches discussed in PART I have interesting considerations with regard to the actants in networks. Based on the data, the literature reviewed above and my preliminary understanding of how I see networks as an ‘interlocking web of human interaction’, all actions and reactions are linked, I find it relevant to explore social aspects of networks in of themselves. Perhaps doing so can shed light on new ways of thinking that are not attached to any specific approach. Thus, this PART II explores the social from the perspective of networks. The next Chapter 11 will further explore individuals and their interactions from an internal (cognitive) perspective.

10.4 Individuals in Networks

“The main organizing principles in networks derive from the social nature of human actors that form collectivities of interacting agents” (Todeva 2006:143). The interactions found in business networks are created by human beings. As individuals we are all driven/ motivated by intentions and we gather information from our interactions and interpret the outcome of these interactions and the intentions of others (Giddens, 1976; Klint, 1985). Every interaction is based on intentions and is interpreted from at least two sides. Through these interpretations the interaction is given meaning” (Ford, Håkansson and Johanson 1986 in Johanson et al 1994:125). Individuals use these cognitive interpretations to make choices; and experiences and their understanding of these affect these meaning creations (these will be further explored in the next chapter). Over time changes to understanding of activities gives way to the potential to learn. In attempting to show your own intentions in a positive light (or with as much clarity as possible so as not to be misunderstood) it is important to also focus on the ability of actors to remember and to use interpretations of past experience to gauge the validity of the current situation (what Johanson calls the intertemporal force). While this can create complexity it can also simplify interaction by creating predictability as well as create trust in the interaction of the actors. Situational repetition and familiarization are key (Johanson 1994, p.213).

I have established above that individuals are drivers of interaction. “Interaction requires that people as individuals and groups in a social context learn to gain and develop the possibilities of an understanding of each other’s subjective views” (Claes 2009:70).

The structural approach posits that actors in networks look for homogeneity. However, in doing so this approach undermines the differentiation present in actors. Actors have varying status, roles, experiences, expertise, education, interests, responsibilities, and affect and are affected by varying factors in and around them. These differences also known as heterogeneity are “precisely some of the differences that affect the decision-making process” (Todeva 2006:76) and the entirety of how individuals understand, perceive, act and interact in networks. These differences originate from many aspects of the organizational and business context, for example the type of organization style whether conservative or liberal, type of industry, and the geographic location of the company. Moreover, the internal understandings and experience by each individual actor such as their competencies and capabilities, education, life experiences such as exposure to other cultures, variation of work experiences and their overall role/position in the organization play an incredible part in creating heterogeneity.

10.5 Networks as Interactions

“Why do actors connect to each other (a question about their motives and drivers)? How do actors connect to each other (a question about the forms and types of network links and bonds)?” Todeva 2006:87). “Mohr and Nevin (1990) referred to communication as the “glue” which binds together relationships” (Johnston et al 2006:947). “The question of how individuals communicate with each other and how business communications take place is an important aspect of relational analysis” (Todeva 2006:89). And the essence of communication “resides in relational and interactive processes comprising multiple social components such as: developing shared frame of reference,

exchange of other resources, joint monitoring and evaluation of the relationship, and the information accuracy and transparency” Todeva (2006:91).

After identifying the individual in networks above I now examine networks as interactions. “A fundamental characteristic of interaction is that it is at least bilateral and sometimes multilateral; there are at least two parties involved at each moment” (but should not be limited to a focus on dyads as in the structural approach). “The parties are aware of each other’s existence and try to understand and influence each other” (Ford, Håkansson, Johanson 1986 in Johanson et al 1994:125). “Interaction processes create adaptations in attitudes and knowledge of the parties, that is, a mutual orientation develops. This *mutual orientation* is manifested in a common language regarding technical matters, contracting rules, and standardization of processes, products and routines. Less overt aspects of the mutual orientation may involve views on business ethics, technical philosophy and handling of organizational problems. A most important aspect of the mutual orientation is mutual knowledge, knowledge which the parties assume each has about the other and upon which they draw in communicating with each other...It is a subtle knowledge based on personal experience and takes time to develop” (Johanson and Mattsson 1987 in Johanson et al 1994:175). This can be compared to know-how and know-who, both types of knowledge are difficult to articulate and tend to rely on experiences, gut instincts and perceptions.

Todeva (2006:23) makes a good point when she considers the plurality of action in relation to individuals interacting. She introduces Habermas’ (1981) theory of action into her substantial network review. According to Todeva, Habermas defines three main types of action: 1) objective or cognitive action that is representative of knowledge and learning, 2) inter-subjective action that is representative of social interactions and relationships and 3) expressive action that is representative of spontaneous action.

Newcomb, Turner and Converse (1952) are cited in Johanson et al 1994 pg. 136 (also Hallén, Johanson and Seyed-Mohamed 1991 Journal of Marketing 55 pg. 29-37) to contribute to the understanding of interaction between individuals as a process of ‘adaptation’, where ‘two or more individuals simultaneously affect and are affected by each other in relatively enduring ways’ once again places emphasis on the importance of the exchange between individuals. Adaptations are also dependent upon the ‘frequency, complexity and regularity’ of the exchange process (Johanson et al 1994:174). Also important to point out is the act of participation in networks, closely related to interaction. “*Participation in activities means actors taking part in events and contributing to a scenario that involves other actors and multilateral distribution and utilization of resources*²⁶. *Participation also means information and knowledge exchanges that lead to the emergence of communities of practice [Wenger 2003] and knowledge structures*” (Todeva 2006:28). Through interaction and participation, relationships can be built. The next section explores relationships in networks.

²⁶ Resource here is defined as by (Emerson, 1981) not by an economic understanding. Thus resource is “a possession or a capability of an actor” (Todeva 2006:28); it refers more to intangible, ideational competencies such as knowledge, expertise, and experience.

10.6 Relationships

Relationships and interaction are similar but not the same. Interactions happen all the time with people you will most likely never see again. Interactions that never become relationships can be defined as encounters; they are exchanges but they are momentary and fleeting unless they become frequent and develop into a relationship. When you attend a company-wide meeting you may interact with co-workers from other departments that are strangers to you; other examples of interactions can be in virtual conference calls with a new R&D unit in China, at lunch, or in meetings. However, relationships regardless of the duration are concretely established by the purpose of exchange at first and the amicable feelings of trust and reciprocity that develop over positive exchanges/interactions. *A relationship is defined in terms of the promise tomorrow holds, the existing exchanges and previous patterns of interaction (its history; the intertemporal force).* Not only is the purpose of a relationship a defining factor but even when relationships have been established it is the encounters/exchanges that become known as interactions. The interactions or encounters/exchanges continue to define a relationship and the relationship itself and the participants' experience of it also provides the context for all subsequent interaction (see also Johanson et al 1994). The existence of long term relationships does not always mean simplification and greater understanding of actors. Contextual forces, such as environmental factors, influences from other actors or simply the misconstrued interpretations of meanings may cause irregularities in how relationships evolve. (For a further discussion on relationships see Rosson and Ford (1982).

It can be assumed that over time actors also learn how to better interpret and interact with colleagues causing more predictability and simplifying the encounter in order to learn more from the clarity of messages being exchanged. However, this may not necessarily be the case. For instance, regardless of the length of time individuals in dyadic relationship have known each other; contextual situations can test the relationships strength and conflict can arise in any relationship. However, what I would consider as a relationship builder more than time is *co-created and co-experienced participation* where individuals are able to perceive, understand, learn together; thus creating bonds. The co-creation of meaning emerges when bonds (what Kilduff and Krackhardt 2008:265 call "friendship groups") are formed. I would rather refer to them as bonds as I see *friendship* as something much more intimate that takes time to develop. For example, participating in a project team can create bonds with your project team members, however, I would not refer to them as friends and there would be a clear difference between these relationships and those of my personal friends outside of the work place. The stability of such bonds much like what Kilduff and Krackhardt write depends on '**continual effort to engage**'. These bonds can be created even in relatively new relationships and are meant to create mutual orientation far greater than just general interests can. Under PART I of this chapter when reviewing the relational approach I presented four forces posited by Johanson et al (1994:158) to be of great relevancy to network relationships. According to Todeva (2006:29) these four forces 1) functional interdependence, 2) power structure, 3) knowledge structure, and 4) intertemporal dependence or the history, memories, investments in relationships, knowledge and routines of existing interactions, "bind actors together".

Johanson et al.'s (1994:172) conceptualization of relational bonds (there were five: technical, planning, knowledge, socioeconomic and legal) for inter-firm relationships can also be applied to intra-firm network relations as the relational exchanges (whether internally or externally) create the interactions that affect the activities that are enacted in the environment. While I am a little weary

of the categorical nature of their conceptualization, it is cited more for perspective than a complete picture of existing bonds. The four binding forces discussed above are more in tuned to the embeddedness of relational ties in networks while the latter five relational bonds are more categorical and address where and what kind of bonds could exist in networks. There of course, are additional bonds to those noted. Moreover, these relational bonds may have varying significance in multi-cultural settings where individuals have different values and norms. The table below expands on the list from Johanson making it clear that the social/relational aspect is vital to getting things accomplished in networks.

Table 18- Common Relational Bonds found in Business Networks

Common Relational Bonds found in Business Networks	
Technical/Expertise & Knowledge/ Informational	The level of comparable technical know-how and/or expertise although culturally contingent will influence the type of relationship that is developed. While individuals that share a common passion for a field can adopt an intimate relationship based on this commonality there are other factors that will play a role and could affect the relationship. On the other hand a common passion could spark a rivalry for superiority of the field.
Planning/Managerial & Legal/Decision-making & Socio-economic/Financial	The need for managing and prioritizing of a project can lead to the development of relational bonds; however, lobbying is frequently exercised for gaining the influence of individuals with the power to make things happen.

Source: *Expanded from Johanson (1987)*

Mutual orientation is also identified as a vital component of successful business relations (Johanson 1987, Haakonson ed. 1982.) Mutual orientation signifies that both/all individuals participating in the interactions and eventual relationships are aware of one another's interest and are invested in assisting one another. Additionally, mutual orientation implies some form of trust already present by establishing the relations; goodwill. Therefore, based on the above discussion it can be proposed that there are three vital characteristics of relationships: to *learn, adapt and influence* (Johanson 1994).

A word on adaptations. "In organization theory, where references to adaptations are frequent, the following two aspects have been stressed. The contingency theory focuses on the organization-environment interface (Lawrence and Lorsch 1967) and the behavioral theory emphasizes the dynamic or history-dependent aspects of adaptations and their role in organization change (Cyert and March 1963; March 1988)" (Hallén, Johanson and Seyed-Mohamed 1991 in Johanson et al 1994:137)." In addition, adaptation can be assumed to be a significant feature in the dynamics of business relationships. One or both of the parties may make adaptations to bring about initial fit between their needs and capabilities, but adaptation also may be necessary in an ongoing relationship as the exchanging parties are exposed to changing business conditions. Moreover, within such ongoing relationships, the adaptations already made provide part of a framework for

further business expansion” (Hallén, Johanson and Seyed-Mohamed 1991 in Johanson et al 1994:138). “Other scholars have suggested agency theory as an appropriate tool for analyzing dyadic relations (Eisenhardt 1989). Both transaction cost theory and agency theory aim basically at explaining the characteristics of a structure—governance or contract” (Hallén, Johanson and Seyed-Mohamed 1991 in Johanson et al 1994:139). While this discussion on adaptation could easily take us elsewhere I want to keep focused on exploring social aspects of networks. The above discussion so far directs us to consider social control mechanisms present in the interactions and relations in the networks.

10.7 Forms of Social Governance/Control in Networks

As defined above networks are processes of interactions that can evolve into some type of relationship depending on the various components for example as stated in table 16, the capabilities of the individuals and the function/purpose of the interaction can dictate how the relationship will develop. However, it is necessary to examine various other factors that I have grouped into forms of social governance/ control in networks. Factors such as trust, power, reputation and influence are some of the most common governing triggers in interactions and relationships. Forms of social governance such as trust and power, for example, can be used by individuals to adapt to their environment Blau (1964) and Emerson (1962) (Hallén, Johanson and Seyed-Mohamed 1991 in Johanson et al 1994:139). Additionally, social governance forms can also be seen as constructs that help individuals understand, control, adapt and navigate their environment and create knowledge out of the exchanges of information; adding to their internal sensemaking process or their process of self-monitoring. They can therefore be seen as an informal system of checks and balances in organizations, networks, interactions and relationships. Below I focus on the first two that I believe are the most frequent in the data— trust and power. Incredibly necessary in building relationships and interacting in complex knowledge networks and also partly due to their natural opposing polarities trust and power are two of the most interesting forms of social governance; they are discussed below (influence will be discussed in the following Chapter 11).

10.7.1 Trust

It has been recognized that trust is associated with positive experiences and expectations of the transacting parties and reduces risk of future transactions (Todeva and Knoke (2002) in Todeva 2006:107). Networks are complex organizing structures, and as previously discussed power, influence and recognition are key elements of how networks function. Nooteboom (2002:3) identifies the value of trust in organizations as both extrinsic and intrinsic where the importance of extrinsic value rests on the economic value while the intrinsic values rests upon the individual’s need for either self-respect or their need for self-gratification and satisfaction.

Trust is considered universally important; however, it is culturally determined (Schneider and Barsoux 2003:230). “Developing trust is considered to be a key ingredient in making cross-cultural teams effective, and is even more challenging when these teams are virtual and temporary. Temporary teams, such as task forces and project teams, may never meet face-to-face, have no previous shared history, and may never work together again. Here ‘swift trust’ can be created by time pressures and a strong focus on task performance” (Meyerson, Weick and Kramer 1996 in Schneider and Barsoux 2003:246). But this is somewhat of an oxymoron since the very nature of trust, “implies vulnerability and uncertainty, having to rely and another person and not being able to

predict or control the interaction. Thus we make judgments of the other's trustworthiness based upon their confidence, benevolence, and integrity" (Mayer et al 1995 in Schneider and Barsoux 2003:246) and this simply should not be expected to happen swiftly. It is challenging to develop trust in virtual teams (in this study this corresponds to R&D activities that span across the various R&D units). Fukuyama defines trust as expectations of regular, honest and cooperative behavior based on common meaning shared norms and values (Fukuyama 1995 in Schneider and Barsoux 2003:246).

"Building trust is also further complicated by problems communicating across cultures" (Schneider and Barsoux 2003:230). Trust is subject to different implied cultural meanings; it varies across cultures how willing people are to trust one another and the reasons why people choose to trust. It can be said that culture can create rifts in trust and the simultaneous risk and interdependency necessary to work together.

Trust exists both inside as well as outside individuals (both as part of the cognitive decision making processes of every individual as well as a non-actant as posited by (Callon 1986 under the cultural approach in PART I of this chapter). It lives in the minds of individuals as they attempt to make sense of their environment and it also exists in the relationships they are part of. In a sense we can conclude that trust already functions as a form of social governance in networks the problem is that this conceptualization has not been captured for further development.

Trust needs conditions such as vulnerability, perceived risk and some level of mutuality. "Trust is difficult to enforce in a team setting, however, since you can't, compel team members to trust each other. Rather, trust must arise from people's **willingness** to cooperate and **anticipate the benefits** of their cooperation" (Hosmer, 1995:82). However, it is important to remember that this understanding and logic is based on the critical situation that is present in knowledge networks where greater interdependency exists. It is indeed when individuals place only their needs first that misunderstandings and unfulfilled expectations lead to dissolution or dissolved trust.

Child and Faulkner (1998:116) discuss three forms of trust (calculation that occurs at the onset of a relationship, understanding that develops through working together and bonding that is personal identification through a "warm human relationship").

10.7.2 Power

The history of organizational theory delineates the use of power as a way to control individuals in an organization. However, "one of the most profound shifts in the economy is the shift from power derived from possession of tangible assets and inputs to power derived from possession of knowledge and information" (Child (2001:1140) and I would add power derived from being part of key relationships or sub- groups e.g., cliques, in networks. Power has also been defined as a continual change process necessary for organizations to evolve. Hatch (2005) indicates that conflict can be understood as the result of the struggle for power between individuals to have control over one another. This idea is supported by the work of Thorelli (1990) who defines the importance of networks linking their influence in mobilizing as, 'flows of power and information', and that this influence, 'may actually be more important than those of money and utilities'. There are two primary dimensions of purposive power, socialized power and personalized power. The former is focused on ethical and collective good of power and the latter is focused on personal gain over that of the collective good. In addition, to Thorelli's conceptualizations on purposive power there are two

other points regarding power that should be mentioned here. First, according to Fincham and Rhodes (2005) there exist a power play between in-power groups and under-power groups. Secondly, French and Raven (1959) who posit six bases of power (reward, coercive, legitimate, expert and referent power and also information power in Wilson 2004:164) that identify types of power giving individuals clues to understanding the dynamics in their relationships.

“The role of power in social exchange was developed by Emerson (1962). In his formulation, the relative dependence between two actors in an exchange relationship determines their relative power. Power derives from having resources that the other needs and from controlling the alternative sources of the resources. This conception refers to the structural potential power of one actor in a relationship whereby that actor can influence the other to comply with the former actor’s needs. Child (1998:115) recognizes Thorelli’s (1986) conceptualization of power and trust as “factors that dominate network relationships”. Elias (1978 in Stacey 2007:299) defines power “not as something anyone possesses but is rather a characteristic of all human relating”. “Power is this enabling-constraining relationship where the power balance is tilted in favor of some and against others depending on the relative *need* they have for each other” (Stacey 2007:299). This is along the lines of what Latour (1987:264) called the paradox of power, where “when an actor simply has power nothing happens and s/he is powerless; when, on the other hand, an actor exerts power it is others who perform the action”.

According to Todeva (2006:5) “power is interpreted as acting upon other human beings, and as such is also enhanced by the information networking, which facilitates monitoring and control. Networking enhances the transformation of the symbolic value of power itself through endless digital and visual representations”. Todeva’s considerations cue us into reflecting on not just the influence of power but also the *power of perception* given that power is a cognitive element based upon contextual and behavior cues interpreted from our experiences. Kilduff and Tsai (2003:71) make a great point when they reference Cialdini’s 1989:45 example of perceived versus actual power relations: Cialdini called it “basking in reflected glory”, in other words, interpretative associated power. Kilduff and Krackhardt (2008:86) make a great distinction of this associated power when they refer to power as multi-dimensional. There is power through knowledge/expertise or power through influence. They describe it as follows, “some actors are powerful because they are acknowledged as adept at getting things done...despite resistance” while other actors are powerful because of “an ascribed individual trait that reflects intangible qualities of trust and personal charm” (this is comparable to referent vs. expert power in French and Raven 1959).

10.8 Knowledge in Networks

“Knowledge and knowledge transfer is a predominant approach in the network literature. The emphasis is on sending information or finding ways to standardize or make compatible methods of communication to facilitate the transfer of knowledge from one participant or organization to the next and to identify the barriers that slow this process or the structural components of networks that might speed this process” (Podolny and Page 1998 in Weber and Khademian 2008:339).

The process of obtaining knowledge is learning. In organizations learning has been conceptualized as “a routine-based, history-dependent and target-oriented process” (Håkansson and Johanson

2001:208). Networks have been also referred to as “learning networks” (Conceicao and Heitor, 2007). Ebrahim, Ahmed and Taha (2008:2), suggests this substantiates the reasoning that knowledge (the sharing of information and the emergence of new knowledge) is critical to the success of networks and here it is implied that individuals and their interactions are necessary for knowledge processes to take place and moreover, to be successful.

While the concept of how we acquire knowledge and knowledge processes will be further elaborated in Chapter 11 that reviews the literature on Individuals and their Interactions, it is relevant from a network perspective to explore knowledge briefly because as described above it is a significant aspect of the inner working and success of networks. In Chapter 9 when reviewing culture, I explored several ‘influencers’ of culture—Learning & Knowledge was one of these. I established several points that are relevant to reconsider here: 1) knowledge is a cultural artefact, 2) knowledge acquiring processes are important towards how individuals in networks co-create meaning and thus, interact and 3) methodologically speaking knowledge, i.e., how people learn, can give us clues into understanding how manifestations of culture are internalized, understood and how behavior is enacted from those internal process. Here I focus on knowledge in networks.

All three of the approaches reviewed in [PART I](#) fail to address the importance of knowledge. However, according to Todeva (2006:68) organization theory does refer to organizations as “a bundle of knowledge and skills embedded in organizational routines and practices” (Kogut and Zander, 1992, 1996; Grant, 1996; and Spender, 1996). Furthermore, knowledge is treated as an “essential element of the learning process that takes place in parallel with the work process” (Todeva 2006:68). Therefore individuals (employees) are no longer seen as just employees fulfilling a specific task but as more—adding value not only to themselves but also to the organization and this includes groups, teams, functions, departments and networks they are a part of. Moreover, the information exchanged between individuals becomes invaluable for 1) the success of the company 2) continued success of the interactions and 3) the long term evolvement of current relationships and establishment of new ones. Therefore it is vital to examine knowledge processes and knowledge flows.

“Knowledge is socially distributed and the mechanism of this distribution can be made the subject matter” (Berger and Luckman 1967:16). In other words placing focus on the individuals that hold the knowledge could be a way of better articulating what is going on in the knowledge exchange process. Johanson et al (1994) refer to the importance of networks as viable sources of learning processes through the, “**dynamics of the interaction**” (Ford, Håkansson and Johanson 1986 in Johanson et al 1994:133) and Weber and Khademian (2008:335) acknowledge that, “**knowledge sharing and integration are key to building collaborative capacity**”; this competence can be understood as equivalent to network effectiveness.

Borrowing from the literature of networks in public policy written by Weber and Khademian (2008:335) I explore how these scholars emphasize the “importance of a collaborative capacity builder”. According to Weber and Khademian a collaborative capacity builder is a manager (I would say anyone that takes a leadership role) that is able to “*integrate disparate knowledge*” “*through understanding knowledge as practice*” with a keen understanding of the “*context or frameworks*” used for unraveling the sending, receiving, comprehension and integration of knowledge in practice “*all in an effort to build and sustain collaborative capacity*”. According to Weber and Khademian

(2008:338) there are two main implications for how we conceptualize information and our capacity to use this information to solve complex issues: 1) the fundamental difference between knowledge and information and 2) a greater awareness for the socially constructed nature of knowledge acquisition. For example, the following excerpt from Weber and Khademian (2008:338) reflects that “knowledge” can be constructed and contextually dependent endeavor; for example, the diverse lenses of experience equating to assumptions and perceptions that can be difficult to alter.

“Each set of participants...does not bring “information” to the network about the problem; rather, these participants know the problem and perceive possible solutions through their engagement with the problem. Each has experienced, perhaps analyzed, discussed, and interpreted the dimensions of the wicked problem through specific lenses, or communities of discourse and these diverse lenses of experience create formidable barriers” Weber and Khademian (2008:338).

When discussing knowledge in the context of networks it is important to reflect on **absorptive capacity**, which is the ability to “assimilate and replicate new knowledge gained...” Tsai (2001:998, also Cohen and Levinthal 1990). “Knowledge is developed as a “process of learning by interacting, implying incremental learning” (Uzzi 1997; Grant 1996 in Håkansson and Johansson 2001:189). Repeated interaction develops co-created meaning that further gives way for knowledge exchanges (see also Håkansson and Johanson 2001; Kogut and Zander 1993). Knowledge is expressed in routines, through members co-operating, which influences and facilitates the transfer of knowledge.

There are also the issue of **conscious avoidance** of knowledge sharing or knowledge access either due to the risk of losing the valuable information or knowledge or the opportunity that someone else may gain a better role and/or stance among colleagues when they add ones knowledge to their own collection of knowledge and information. On the other hand, it can simply be a matter of access; just not knowing who knows what in the network. That is why, “knowledge must be understood in the context of practice” whether that is a specific location, a specific place in time or a specific project or sets of relationships (Weber and Khademian 2008). Therefore, one can conclude that, “knowledge transmission tasks are communication issues that are grounded in social and political relationships involving heterogeneous actors with diverse interests and goals. The knowledge integration task is likewise grounded in these same relationships and involves taking what is known among network actors, engaging the collaborative network dynamics so that new information is developed, and putting it all together into a practical, useful [forms] for problem-solving purposes” (Weber and Khademian 2008:344).

The process by which knowledge is created is so immensely critical not just to the design and execution of the ambitions of an organization but to understand the complexity of interactions within networks. Traditionally, the literature has accepted Nonaka (2000) who emphasizes the need for focusing on the process of transitioning knowledge from tacit to explicit that will ultimately lead to the follow through of aspired visions. On the other hand, Johanson and Håkansson (2001) talk about knowledge, how it is usually categorized as explicit and tacit. The key difference is when they state, “...tacit knowledge (or know-how) is not easily expressible since it is personal, deeply rooted in action and in the individual’s commitment to a specific context”, i.e., it is embodied within individuals. Tacit knowledge is also hard to formalize, and therefore difficult to communicate to others (Nonaka, 1991). Johanson and Håkansson (2001) have chosen not to categorize knowledge

into separate boxes but rather hold on to the idea of Dahlqvist (1998) who also argues that knowledge should be seen as a **process** that is intertwined with the other activities of the actors (p.209). Holden (2002:43) best articulates this concept when he writes:

“networking is in fact a cross-cultural knowledge-sharing activity and is, as such, also a form of cross-cultural negotiation, in which protagonists strive to agree on (a) who is going to share with whom which mutually held resources and (b) the degree of access to those resources and degree of compensation or form of consideration for the privilege of obtaining that access”.

Based on the presented concepts and overall discussion, it can be stated that, **knowledge is shared through exchanges and repeated interaction, and the development of relationships with other actors in networks. These exchanges provide individuals the opportunity to learn through the dynamics of interaction.**

PART THREE- DEFINING NETWORKS & SENSE-MAKING FOR THIS STUDY

PART I above presented three of the most common approaches used to understand and analyze networks. PART II explored social characteristics of networks independent of a specific approach. The reason for this was primarily to reveal new understanding of the social aspects of networks not being encumbered by theoretical underpinnings and methodological responsibilities carried with specific approaches. PART II was a free space to discuss all the following in the context of networks: individuals, interactions, relationships (and through relationships, specifically two social governance mechanisms present in networks) and knowledge. In directing a more specific focus towards the research questions PART III defines networks and make-sense of the inter-disciplinary literature reviewed above for the purpose of this study.

10.9 Making Sense of Networks

An ‘interlocking web of human interaction’, all actions and reactions are linked; this preliminary definition that I have had from the start can be misconstrued to mean that all interlocking parts of the web need to fit perfectly for the network to work and succeed. This is not the case. While all actions and reactions to some extent are linked, that should not imply that these linkages exist without conflict, inconsistencies or ambiguity. Nor should it be assumed that conflict is an entirely negative constraint on the network. In this case, conflict and inconsistencies allow for the revision of common practices. Feelings of ownership allow for more of an investment from employees, where they feel more free to speak their mind and also believe their stance on a given issue will be seriously considered.

The concept of networks has been used in many different fields, however, the literature is in consensus defining networks in business as organizational structures; process structures where social relationships are enacted. Child et al (1998:114) point out six reasons for the creation of networks: 1) reduce uncertainty 2) provide flexibility 3) gain access to competencies (that are otherwise engaged) 4) improve on efficiency 5) gain access to new competencies and 6) access information. Networks thrive on a “shared-context” Todeva (2006:69). Network ties or interactions

can be both emergent and induced by formal roles (see also (Podolny and Baron 1997:677). Networks can be further defined as a structure formed by the continuous interaction of individuals (Burkhardt and Brass 1990 in Knoben 2008:39). Networks have been compared to systems as has the concept of culture. But as Stacey (2007) points out there is an inherent rationalist causality in systems that simply cannot be applied to humans. While individuals are able to internalize what they experience in order to understand and act upon these perceptions they do this through a process of exchange with others. Therefore we can re-conceptualize network research's core constructs to focus on "the dynamic interplay of distinctive individuals in complex social networks" (Kilduff and Krackhardt 2008:265).

As the review illustrated and most network scholars have employed (by choosing different approaches to explore different levels of analysis) networks can be analyzed on a spectrum where one side looks at macro features (e.g. the network as a whole) and where the other side of the spectrum explores micro features (e.g. in actors, processes in depth). Networks are shaped by actants (both human and non-human) in processes of action; networks are also influenced by the processes in the organization. Cultural manifestations as well as how interactions develop between individuals also have a great impact on the development of networks. "All network members, although formally regarded as equals by virtue of their membership, will not have the same degree of power, and it is the linkages between the members and their respective power over each other in causing outcomes that determine the culture of the network" (Child & Faulkner 1998:116).

Networks are created in any context where there is more than one member of any given group interacting. D Ford, H. Håkansson and Johanson also refer to this as an, "interacted environment" and they also refer to Weick (1979) who calls it an, "enacted environment" (Johanson et al 1994:124). All these terms really mean as Weick (1995) explains is that networks, as part of organizational structures, are created by the individuals of the network and do not exist independent of the organization. The social aspect of network structures provide the best arrangement for accessing information as well as for open communication practices (see Powell 1990; and Liebeskind et al 1996:431). Todeva (2006) while highly focused on the relational aspect of networks also relates the relations and interaction back to business where she states networks are to be examined as, "structures of relationships between *heterogeneous actors* interacting for a business purpose"; emphasis on business purpose should not be forgotten.

From an organizational perspective the "cohesiveness of a network conveys a clear normative order within which the individual can optimize performance, whereas a diverse, disconnected network exposes the individual to conflicting preferences and allegiances within which it is much harder to optimize" (Podolny and Baron 1997:676). On the other hand organizations can also benefit from loosely coupled networks since they provide greater opportunity for new sources of information. Again from an organizational perspective, "a dense, redundant network of ties is often a precondition for: 1) internalizing a clear and consistent set of expectations and values in order to be effective in one's role, and 2) developing the trust and support from others that is necessary to access certain crucial resources (political aid, sensitive information, etc.) and to implement strategic initiatives" (Podolny and Baron 1997:676) (see also Kilduff and Tsai 2009:44 and Larson 1992:87) that emphasize the importance of trust and reciprocity in building successful collaboration processes. However, we should not forget the understandings gained in the last chapter, when

considering only the integrationist perspective as it could result in not seeing the entire picture. For example, while there are benefits for a dense network there are also disadvantages such as not having access to new sources of information or the risk of losing status should you lack influence or have a falling out with other network members.

10.9.1 Defining Networks

For the purpose of this study I will use the following two-part definition for understanding intra-organizational (knowledge) networks as:

- 1) *Human created frameworks for understanding the interlocking web of human interaction necessary to exchange interpersonal resources such as information, competencies, opinions, ideas and expertise, and*
- 2) *as the development of relationships based on continuous interaction with the aim of successful task completion, the reliance of interdependent value in collaborating and the promise/expectation of reciprocity.*

The above definition highlights the importance of four aspects of networks: 1) interaction of individuals, 2) the relational aspect, 3) importance of interdependence and the need for reciprocity to be fulfilled and 4) the longitudinal nature of intra-organizational networks; these are further elaborated below.

The importance of interaction

“At the heart of this dynamics is the notion of individual actions and interactions. Different actions and choices are the engine that drives the formation and evaluation of networks” (Todeva 2006:46). Although (the relational approach) Johanson et al (1994) focused on macro-interfirm networks for the purpose of internationalization their most basic concept about networks is relevant and can be applied in most all types of networks; for example, they viewed **interaction** as a very critical process one of, “giving and receiving information” (Ford, Håkansson and Johanson 1986 in Johanson et al 1994:125). I too, set the act of interacting at the center of understanding networks. This giving and receiving of information is integral in the creation and evolution of networks.

The importance of relationships

Being mindful of the importance and relevance of knowledge creation and knowledge exchange in networks (more specifically of knowledge workers²⁷) it is important to realize that the interaction and the further **development of relations between individuals can be a fundamental factor in the success of projects**. I agree with Kilduff and Tsai (2003:114) when they state that “social networks [are] responsive to the ongoing aspirations and efforts of individual actors”. Moreover, Kilduff and Tsai (2003:1) also emphasize the importance of the relationships that form the networks and how these connections are instrumental in the success or failure of projects; yet, another reason illustrating why the individuals sharing and transferring knowledge become so important in networks.

The importance of interdependence and the need for reciprocity to be fulfilled

The networks specific to this project are made up of intra-organizational R&D employees, given this context it is important to consider the *need for interdependency, of continuous interaction and of*

²⁷ Knowledge workers are those in the business of creating new knowledge that should sustain the organization's future aims.

reciprocity. Interestingly enough the literature also parallels my observations; there are three central ideas that are essential for individuals in networks: 1) reciprocity 2) the necessity of trust and 3) interdependence or commonality in purpose and/or interests (see also Josserand 2004:30-31). The expectation of future interactions and mutual orientation that exists in networks counteracts opportunistic behavior and increasing the possibility of trust to form amongst network participants. The old adage “never burn your bridges” applies here; when working in one network, you need to mind your manners as you never know when you may need network members again. Over time individuals will develop key network knowledge about who knows what, in other words, individuals develop a reputation and in these networks it is important for individuals to become aware of their interdependence. From the perspective of the organization these interdependent networks offer competitive advantages of specialized knowledge (see also Borghoff and Oliveira, 2000 in Todeva 2006:5).

The longitudinal nature of intra-organizational networks

The three aspects of networks discussed above all imply that specifically for knowledge networks there is a focus on the long haul. These networks are not the same as the networks conceptualized by Burt (1982) focusing on macro representations of system dynamics nor are they those that Johanson et al (1994) explored catering more to the strategic development of market positions. No these networks are meant to build a cumulative knowledge base actually tapping into the uniqueness of the individual participants. The need to be able to effectively use the synergetic effects of collaboration between individuals in these knowledge networks creates the focus on interaction, relationships and interdependence and reciprocity.

The importance of context

“Human created frameworks for understanding” means that humans need parameters for understanding and making sense of their environment. Networks are also created and analyzed by scholar based on their understanding of what networks should represent. We reviewed the three approaches above (structural, relational and cultural) where we could see that all three perspectives cater to different underlying perceptions and understandings. Individuals inside the networks do it too; they create frameworks to under their context based on several aspects of their environment, for example: 1) their interactions 2) how they perceive others 3) how they believe others to perceive them 4) overall network behavior (these will be discussed in further detail in the next chapter that delves into the individual and their interactions).

Moreover, the definition presented above also implies the importance of the context of networks. The following section identifies the primary context for this study as knowledge networks and further explores network context in more detail as it is my understanding based on the literature reviewed thus far and the emergent data that it is important for understanding networks.

10.9.2 Knowledge Networks in Context

While there are different types and reasons for the creation of networks this study focuses on knowledge networks. As discussed in PART II above, knowledge in networks is defined by the focus on sharing information and expertise and developing new knowledge together. “New knowledge and practice is embedded in the operation of the networks and the interactions between network actors” (Todeva 2006:145). In knowledge networks, the environment is usually complex and very dynamic, there are many specialists and they need work together to accomplish their tasks. This

complexity is exemplified by what Weber and Khademian (2008:336-7) termed ‘wicked problems’ as those problems that are “difficult to define, with vertical and horizontal cross-cutting dimensions, multiple stakeholders, close connectedness with other problems, trade-offs between values and a relentless quality”.

“Wicked problem-based network settings involve highly diverse participants, so the information flowing through the network is likely to have different meanings, different uses, and different values for the individuals and groups receiving and using it” (Weber and Khademian 2008:337).

“Any effort to effectively manage a wicked problem will require a broad range of knowledge, to develop a new base of knowledge to address the complexities of the wicked problem and to serve as a premise for cooperation, and the effort to transfer, receive, and integrate knowledge will be an ongoing effort” (Weber and Khademian 2008:337).

This section delves into contextual factors that are necessary to consider but again I would rather discuss them independent of any particular approach as I believe this is the best way to make sense of network contexts and apply to this specific study. I will limit this section to the following contextual factors: 1) *network boundaries*, 2) *accessibility, accountability, autonomy and adaptability*, and 3) *organizational priorities vs. politics of networks* and 4) *leadership*.

These four contextual factors provide the opportunity to better understand the ‘why’ of the ‘how’ we do things. Stated differently, it is a new way of looking at “wicked problems”, and through a fresh perspective developing new ways to address the complexity and give way to collaboration.

10.9.2.1 Network Boundaries

There is a lot of discussion in the literature regarding network boundaries. According to the literature boundaries can be either pre-set or emergent. Todeva (2006:147) states “one of the main criteria that is used to draw organizational boundaries is the concept of ownership”. However, this criterion is based on formal structures where legal issues and contracts are used. From an intra-organizational knowledge network perspective there are two main criteria for drawing network boundaries: 1) personal frame of reference and 2) for organizing purposes. First and based on my experiences in the field network boundaries are contextual and are used by individuals, practitioners as well as scholars to define parameters; as boundaries provide a frame of reference that allows us to work from a given context. These sentiments are also echoed in the literature Todeva (2006:148) states that network boundaries cannot be observed and have to be outlined by researchers; moreover she writes, “Boundaries are always assumed”. For example, this study is limited to the R&D units networks as well as internal organizational network boundaries. It would be naïve to think that R&D employees’ networks are only limited by these parameters as R&D employees need to collaborate across the organization’s functions such as marketing, sales and production (to name a few), as well as outside the organization with suppliers, partners and universities, for example. However, for the purposes of this study there are obvious limitations and therefore boundaries set on the reach of the data; nonetheless remaining focused on the R&D unit’s collaborative processes. While the frame of reference aspect of boundaries helps simplify the complexity it could also work counter intuitively as it may cause individuals to develop limited or myopic perspective of their environments’ potential.

The second aspect of boundaries is that it has organizing properties. Through the process of organizing boundaries outline two main aspects of networks: 1) key actors (those that have influence, that have authority to make decisions, for example) and 2) the definition of in and out groups/individuals. Todeva (2006:147) created a list for identifying six boundaries of a network (see table below).

Table 19- Types of Network Boundaries

Types of Network Boundaries	
Communication Boundaries	Our role in the organization can limit our interactions
Cultural Boundaries	Cultural artifacts unite and separate individuals
Location Boundaries	By nature proximity makes it easier to work together thus location can have a hindering effect.
Knowledge Boundaries	Expertise in a specific field provides a common language for interaction while excluding others
Learning Boundaries	How we have learnt and how we apply these strategies differs and can limit how we communicate and understand others
Technological Boundaries	Not having access to the same technologies limits the ability to interact

Source: *adapted from Todeva (2006:147)*

Boundaries convey ownership (identity creating) lines of demarcation for communication. Just as network relations are both preset and emergent so are network boundaries. Perhaps there is a link between the perceived boundaries and the relations individuals are attempting to control and regulate.

10.9.2.2 Accessibility, Accountability, Autonomy, and Adaptability

While the term ownership can be used in a normative way to define network boundaries I find that it can be misinterpreted as something functionalistic. Therefore, there is good reason to explore what I call the Four A's of networks: accessibility, accountability, autonomy and adaptability. These four network elements are context-generating and thus, boundary defining; paradoxically taking away the power of the term ownership, however, perhaps replacing it with order. As explained in the definition above, networks are focused on human interaction; the four A's are ways individuals can manage how they interact with others.

Accessibility refers to proximity or closeness to other actors. Moreover, it is the process of how individuals grant or deny access to information and other resources. This is based on how much mutual orientation individuals share with one another and if they are able to trust one another. **Accountability** refers to "walking the talk", "do what you say", in other words it is delivering on what you say you are going to do. However, the act of being accountable, of satisfying your obligations can be interpreted either way (good or bad) depending on the relationship the individuals have to one another. The success of being accountable weighs heavily on the development of individuals' future relationships. Todeva (2006:145) states that "control and accountability remain one of the

most important organizing tools for achieving objectives and target performance". However, she states that these can only be considered in "in the context of formal network agreements and contracts", I disagree. Accountability, along with access, autonomy and adaptability can all be used as social control mechanisms by the individuals in informal networks as well. For example, the individuals of HQ R&D unit have access to specific knowledge just from being at HQs and this includes proximity to others in R&D as well as other functions such as sales and production. Individuals in other global R&D units may sometimes need to gain access to specific information that may or may not be readily available. These processes of sharing are integral to successful ongoing collaborations and it is paramount that individuals specifically in intra-organizational networks (where informal network structures govern a lot of the happenings) become aware of their interdependence and need for reciprocal acts. It is not a question of either or, control and accountability are present whether the networks are informal or formal. This touches upon my previous discussions of how individuals use social governance forms to manage their relationships and interactions in networks.

Autonomy refers to the freedom given to individuals to manage themselves in organizations where network structures prevail. While all employees have department managers as well as project managers they report to, it is very much up to the individual employee to determine how they will manage their work tasks. "A general assumption regarding the autonomy of the actors as occupants of a status is that their power is determined by the extent to which they are capable of realizing interests without, or despite the constraints from others" (Todeva 2006:155). In other words the traditional and structured decision-making processes are converted into people driven processes; thus responsibility lays to a large extent on the individual as an independent actor but also on groupings of individuals together. This high level of engagement requires an equally high level of **Adaptability** which refers to the ability to be flexible and recognize when new methods need to be undertaken to achieve your goals. As referenced above in PART I adaptation is also known to strengthen bonds, reinforce relationships and is indicative of space for change in the relationship. All in all providing greater opportunity for mutual orientation (see Johanson et al 1994).

10.9.2.3 **Organizational priorities vs. politics of network**

Two contextual elements play a role in how networks develop and evolve: organizational priorities as well as the politics that develop in network structures. These are important for how we understand and analyze networks because they influence our understanding of phenomena. Moreover, it is not only these two elements as standalone factors but also their natural interplay. Organizations set out strategies and action plans both short and long term in order to achieve their goals. All managers and employees are aware and to some degree have an understanding of these and how it affects their work. When organizational structures are traditional top-down, the roles, expectations and decision-making points are quite clear and leave little room for speculation. However, while network structures have many positive aspects and advantages for organizations they also create complexity and ambiguity. Politics replaces bureaucratic processes. It is in the spaces between prioritizing overall organizational goals vs. individual, project, department, unit goals that falls into some gray area. This aspect of the context can create a lot of ambiguity and negative effects. For example, considering decision-making in networks the issue becomes a case between identifying who has the authority to make decisions and/or whether decisions take a long time because no one wants to stand up and take the risk of deciding. Such ambiguity of an important

aspect of business plays a significant role in network dynamics and has lasting repercussions as to how the context is 1) interpreted and 2) how individuals will behave when taking these situations into considerations.

10.9.2.4 Leadership in Network Structures

Leadership in social networks is a function of the dynamics of interaction. According to Kilduff and Krackhardt (2008:14) leadership is a “general concept applicable at many different levels in the organization, and to include both formally designated leaders as well as informal leaders”. Likewise is the concept of shared leadership that according to Novak (2008:38) means “broadly distributed” “leadership and influence” over a group of people with no specific focus on one individual as leader. “Bartunek, Walsh and Lacey (2000) offered a perspective on [the different aspects required of leaders and identified] between two categories of leadership actions. They suggested that some acts of leadership were *initiating* whereas some we *facilitating*”. “The role of leader is to participate actively in local interactions to widen and deepen communication. Many however prefer the myth of the hero who can change the whole to the ordinary activity of real leaders who work with others to co-create the perpetually constructed future of an organization” (Stacey 2007:301).

Zhang, Liu, Tian and Earn (2006) suggest a framework for high performance leadership that focuses on understanding the process of leadership in knowledge-based companies. They use a three part approach focusing on strategic vision, leadership behaviors and leadership skills. The table below identifies the sub-components that underpin the three approaches. I felt it necessary to present this framework as many of the underlying sub-components are in line with relational and cultural aspects of networks discussed in PART II and the proposed definition of networks in this PART III with focus on collaboration and flexibility.

Figure 51- Three Approaches to High-Performance Leadership in Knowledge-Based Organizations



Source: adapted from Zhang, Liu, Tian and Earn (2006:1276-1277)

Lastly, it has been stated that effective leadership “involves building social capital” by helping subordinates with career opportunities as well as extending their networks (Kilduff and Krackhardt,

2008:33). Therefore, if we bring this framework back into the network literature we can see that according to Kilduff and Krackhardt (2008:33) “Leader effectiveness” can be measured by a leader’s success “in promoting the social networks and leadership potential of subordinates” and these are noted by the sub-components in figure above. This is one way to grow the network and secure its future. Mentoring becomes a key tool that can facilitate up and coming leader types in networks; integral in global R&D units to build links across geographic and cultural boundaries. Kilduff and Krackhardt (2008:33) add that “the mentoring of underrepresented group subordinates involves facilitating the development of subordinates’ own networks that may expand in directions not covered by the leader’s own connection.

10.10 Chapter Summary

This review has explored networks in business: how they are defined, conceptualized and used. More importantly the review of the literature exposed several insights in each of the three parts, they follow below.

PART I allowed us to review the three most applied approaches for understanding networks in organizations. From this review we can acknowledge the relevant application from the relational approach of Johanson’s four forces: 1) functional interdependence, 2) power structure, 3) knowledge structure and 4) Intertemporal dependence (its invested history that includes memories, relationships, knowledge routines, etc.) towards networks relationships. The four aspects of interactions (capability, mutuality, particularity and inconsistency) also provide tools to understand interaction processes. Mutual orientation is identified as a vital component of successful business relations and signifies that both/all individuals participating in the interactions and eventual relationships are aware of one another’s interest and are invested in assisting one another. Another beneficial contribution of the relational approach is that of adaptation to network context.

From the cultural approach we learnt that it is the focus on the experience of network actors as cultural participants, “acting, interpreting, and imagining networks—through language, symbols, myths, stories, rituals and other processes of human action and imagination” (Todeva 2006: 30-31). Important also is the concept posited by Callon (1986) of how non-human actants can also have an influence on the underpinnings of the network but only through human actants. Moreover, as Kilduff and Tsai (2009:67) also explained that, “to understand how structures change over time, the analysis of individual actor attributes, motivations, cognitions and behaviors in actual social contexts such as organizations may be helpful”. The structural approach re-emphasized the importance of bridges (boundary spanners) for growing and connecting networks.

Overall, PART I set the tone that the previous chapter on culture could imply—the significance of individuals and their interactions is vital for understanding and managing networks in business. The focus on individuals, on their interpretative capabilities that shape their world is part of “the process of change and evolution in networks as facilitated by the evolution of ideas that emerge as part of the networking practice” (Todeva 2006: 30).

PART II provided a closer more intimate yet decoupled exploration of the socialness of networks through individuals, interaction, relationships, and social forms of governance such as trust and power and lastly knowledge. However, it becomes evident that the relational and cultural approaches have a great hand in developing the conceptualizations explored and discussed here.

PART II taught us that while individuals add their unique contributions to network processes, it is through the interactions that the social is “enacted”. There are three vital characteristics of relationships: to *learn, adapt and influence* (Johanson 1994). As Kilduff and Krackhardt (2008:264) write “nodes are constituted in part through their relationships with others in the network, but they also bring to any particular network idiosyncratic network expectations and perceptions. Thus, network stability and change involve both patterns of interactions within the overall network and the idiosyncrasies of the network actors in terms of their cognitions, personalities and expectations regarding the social network”. Here too it became known that it is therefore a combination between the individuals and their context that has relevant importance for how we explore network structures.

Actors have varying status, roles, experiences, expertise, education, interests, responsibilities, and affect and are affected by varying factors in and around them. These differences also known as heterogeneity are “precisely some of the differences that affect the decision-making process” (Todeva 2006:76) and the entirety of how individuals understand, perceive, act and interact in networks. These differences originate from many aspects of the organizational and business context, for example the type of organization style whether conservative or liberal, type of industry, and the geographic location of the company. Moreover, the internal understandings and experience by each individual actor such as their competencies and capabilities, education, life experiences such as exposure to other cultures, variation of work experiences and their overall role/position in the organization play an incredible part in creating heterogeneity.

The existence of long term relationships does not always mean simplification and greater understanding of actors. Contextual forces, such as environmental factors, influences from other actors or simply the misconstrued interpretations of meanings may cause irregularities in how relationships evolve. (For a further discussion on relationships see Rosson and Ford (1982).

Social governance forms can be seen as constructs that help individuals understand, control, adapt and navigate their environment and create knowledge out of the exchanges of information; adding to their internal sensemaking process or their process of self-monitoring. While trust is developed through positive exchanges and the development of mutually beneficial experiences, power is based on needs, perception and influence.

PART II also explored knowledge in networks. Most importantly, we learnt that there are two main implications for how we conceptualize information and our capacity to use this information to solve complex issues: 1) the fundamental difference between knowledge and information and 2) a greater awareness for the socially constructed nature of knowledge acquisition (Weber and Khademian 2008:338).

PART III defines knowledge networks for this study and reflects on four contextual factors.

Just as I explained in the introduction of this chapter the literature on networks while it has seen much development over the last decade it has also seen many gaps develop. This is due to the streams of focus and purpose that have developed. I believe there is a missing gap in how to identify and conceptualize intra-organizational multi-national knowledge networks for transnational organizations. Therefore, after reviewing the literature I define intra-organizational (knowledge) networks as:

-
- 1) *Human created frameworks for understanding the interlocking web of human interaction necessary to exchange interpersonal resources such as information, competencies, opinions, ideas and expertise, and*
 - 2) *as the development of relationships based on continuous interaction with the aim of successful task completion, the reliance of interdependent value in collaborating and the promise/expectation of reciprocity.*

The review of the literature has also given me the opportunity of reflecting on the two primary key elements that are necessary in understanding these networks: context and cognition (cognition will be explored in the next chapter). Therefore the remainder of PART III focused on four contextual factors prevalent in networks: network boundaries, the four A's (accessibility, accountability, autonomy and adaptability), organizational priorities vs. politics of networks and leadership. These are the four contextual factors that provide the opportunity to better understand the why of the how we do things. There is admittedly a high level of complexity in the dynamics between these factors and that is why I explore the discussion of wicked problems by (Weber and Khademian 2008); acknowledging as Martin (2002) does that ambiguity and inconsistencies are part of the reality of network processes.

Overall, I identified that network research's core constructs need to focus on "the dynamic interplay of distinctive individuals in complex social networks" (Kilduff and Krackhardt 2008:265). The importance of relational aspect of networks is the core and has to be emphasized. In knowledge networks where individuals are working together to create and innovate it is often the case that they are mutually invested in the success of their projects/tasks. The interplay between context and cognition become incredibly important in understanding collaboration processes.

CHAPTER 11- Literature Review- Individuals and Their Interactions

11 Introduction

"Individuals help shape the networks within which they are embedded" (Kilduff and Tsai 2009:10). One of the compounding issues with understanding networks and collaboration processes is that we need to better understand individuals and their interactions; but as Polanyi (1966) stated, individuals appear to know more than they can explain, thus understanding the inner workings of individuals can easily become an overwhelming feat. In order to simplify this journey of understanding it is important to deconstruct the basic tenants of individuals and their interactions. I have done so by exploring three major aspects and this is also the way this chapter is organized; PART I explores and aims at providing a thorough review of understanding the concept of the individual, through identity, perceptions, sensemaking, and linking perceptions to social cognition. Thereafter, I move towards a review of learning and knowledge and conclude PART I with a reflective discussion of culture as part of the individual. PART II explores the interaction and processes of exchange and what these imply for participating individuals. Here I explore interaction through two major components: relationships and communication. I explore these even further by reviewing roles and the relationship between trust and conflict. Lastly, I explore language under communication. PART III incorporates major tools/processes for awareness building, thus placing emphasis on the combination of the relational and cognitive aspects of interaction. Here I take four of what I deem to be the most relevant "tools" that can empower individuals and organizations: perceptual readiness, sensemaking, self-monitoring and social comparison theory.

This chapter will compile a review of varying aspects that in the researcher's eye help to better understand the individual and their interactions specifically in the context of intra-organizational knowledge networks. It goes without saying that many if not all of these concepts that will be reviewed in this chapter are deserving of an entire chapter in their own right. However, it is important to keep focused on the main purpose of this study; and that is to explore influential components of collaboration processes working towards improving working across culture, distance and time in intra-organizational multi-national knowledge networks.

In order to understand individuals and their interactions we need to acknowledge the importance of learning and knowledge on how individuals perceive, understand and act. (Todeva 2006:66) states that [perceptions] play a significant role in business and "are used to explain how decisions and human actions are framed and evolve over time". How we learn, the process by which individuals acquire knowledge is intertwined with our development, cultural norms, and this shapes how we view and interpret the world and how we understand how others view and interpret the world. Part of the difficulty with co-creation and collaboration is in the communication processes, part is found deeper in our cognitive processes. These processes form a collage of many different experiences, thoughts and knowledge acquired separately, that together creates and shapes our understanding.

Through the iterative process of reviewing the literature on culture and networks as well as the data collected there are some key aspects of individuals that are more prominent and therefore it is

difficult to know where to begin. One of these is the cognitive structures²⁸; including specific attention to interpretation and perception of phenomena. Another is the relational need and significance of such developments in exchanges, however, a more keen look into this from a business perspective. A third is knowledge and learning processes. And lastly how cultural manifestations assist or impede all these. The way in which we interpret and perceive our environment will affect how we socialize, who we trust and how we choose to learn from our environment. Cultural manifestations and their interpretations undoubtedly have an impact in how we accept and embrace opportunities for information exchange and knowledge creation.

Consequently one of the avenues that one can take to explore individuals and their interactions becomes one of clarifying knowledge processes. Therefore, we need to explore both the cognitive and relational aspects of individuals. In the last chapter we reviewed the literature on Networks exploring traditional approaches as well as social characteristics of networks. Through this review I identified that action and interaction are integral in how individuals communicate and relate to one another. However, we should not place all of the responsibility on communication and leave it at that. As Todeva (2006:91) states that the essence of communication “resides in relational and interactive processes comprising multiple social components such as: developing shared frame of reference, exchange of other resources, joint monitoring and evaluation of the relationship”. It is important to be able to communicate effectively and recognize that “Cognitions concerning organizational networks [also] matter” (Kilduff and Tsai 2009:4). Moreover, Kilduff and Tsai (2009:5), “states that networks exist not only as sets of cognitions inside the heads of individuals in organizations, but also as structures of constraint and opportunity negotiated and reinforced between interacting individuals”. I agree and would point out that in the Network Chapter I explored interaction in Networks and identified that while communication is an important aspect in interactions in order to further develop interactions into relationships a *common interest* and *common understanding* together is necessary to build mutual orientation or mutual knowledge. This building of common interest and understanding can be understood as a process of exchange and adaptation where individuals participate in activities together; and depending on how individuals perceive the world around them, further develop their relationships. But how do we create/develop common understanding? How do we identify a common interest? Do we need to identify it; does it develop on its own? Why would we need to identify it and for what purpose? All these questions truly boil down to how do individuals identify, perceive, infer and conceptualize in order to understand.

PART ONE- UNDERSTANDING THE INDIVIDUAL

Drawing an emphasis on the internal cognitive processes of the individual is not meant to circumvent the significance of the creation of these very cognitive processes in interaction. Looking as far back as the work of Vygotsky (1987: 144-145) we are reminded that as he stated, “For us, to talk about a process as “external” means to talk about it as “social.” Every higher psychological function was external because it was social before it became an internal, individual psychological function; it was formerly a social relationship between [or because of] two people”. *PART I* begins with exploring the individual and taking a deeper look within how individuals understand and make

²⁸ Cognitive Structure can be defined as, “a system of interrelated beliefs, preferences, expectations, and values that a person uses to define problems and events” (Jones (1993:488).

sense of the world around them; as this has been a continued common thread uniting the last two literature reviews. The literature on psychology is expansive and varied; it would not make sense to attempt to review all. There are many concepts that could be added to this discussion; however, it is simply not possible to do justice to any of them in their own right. We must stay the course that is specific to this study and only explore the concepts as much as they serve to bring greater clarity to our understanding. Continuing to follow the tenants of the methodology presented in Chapter 2, I let the data guide me to what the main concepts that will be discussed here should be and through cycles of iteration and reflection I have identified perceptions as key for understanding human cognitive structures and their behaviors.

First, I believe it appropriate to also consider identity as a key aspect of individuals and their interactions. I have chosen to begin this review of the individual by concisely exploring identity. Identity is an important factor to explore as identity defines individuals in a continual process between person and context; this dance between cognition and context is quite relevant in the context of long-term collaborative networks such as those in international R&D activities. After briefly exploring identity PART I will turn to explore perception, focusing on the work of Psychologist and renowned researcher Jerome Bruner (1957, 1947, and 1949). Bruner (1957) worked extensively towards understanding the processes of how individuals perceive and make sense of their environment long before Karl Weick began to develop the concept of sensemaking in organization theory. Since Bruner, considerable work has been carried out towards further developing how we understand the inner workings of the individual. I will also take into serious consideration the work of Weick (1979, 1995, 2000). The most recent literature on perception by Zaki (2013) focuses on integrating social cues, drawing parallels between the literature of perception and social cognition. Zaki's (2013) thorough review indicates the strong comparability between perception and social cognition (which should not be ignored); therefore, I will also explore social cognition specifically focusing on the work of Fiske (1993, 2013) that already in 1993 had identified these parallel concepts as well.

11.1 Identity

Identity is defined as: "the collective aspect of the set of characteristics by which a thing is definitively recognizable or known; the set of behavioral or personal characteristics by which an individual is recognizable as a member of a group; the quality or condition of being the same as something else; and the distinct personality of an individual regarded as a persisting entity; individuality" (a combination of Oxford and Merriam-Webster Dictionary entries). For example, "a resident of Rome may define himself with varying degrees of intensity as a Roman, an Italian, a Catholic, a Christian, a European, a Westerner" (Huntington, 1993:24). In the purest sense of the word identity defines a person or thing.

Identity links social context and self-development to make sense of the individual, cognitively, as well as the individual in society, contextually. The conceptualization of identity has been a topic of great interest for scholars in both sociology and psychology. In psychology the focus has been on the internalization of identity while in sociology the focus has been more the interaction between the individual and society. Here I present two major influential "originating" scholars: Charles Cooley and Herbert Mead. Psychologist Charles Cooley (1909) explored the properties of what he called "looking glass effect" that simply put is how individuals search for affirmation of their self-images

from “significant others” in their life outside of themselves. Sociologist Herbert Mead (1934) further explored identity; however, instead of focusing internally, he focused on the interplay between the self and society. He posited, “The self as emerging out of the mind, the mind as arising and developing out of social interaction, and patterned social interaction as forming the basis of social structure”.

Recent scholars have conceptualized identity as a combination of both conceptualizations. Stets and Burke (2000 and 2003:11) state, “identity is the categorization of the self as an occupant of a role, and incorporating, into the self, the meanings and expectations associated with the role and its performance”. Whether we look at Mead or at Stet and Burke, social structure becomes an “essential element of the reality of everyday life” (Berger and Luckmann 1967) for understanding identity creation. Moreover, as the self *emerges in social interaction* (Stets and Burke 2003; Mead 1934; Cooley 1909) then individuals tend to have roles or identities representative of their social circles (Stryker 1980; Mead 1934). Stet & Burke (2003:8) pinpoint the concept of the multi-selves originating from Psychologist William James who in 1890 wrote that, “...a man has as many social selves as there are individuals who recognize him and carry an image of him in their mind”. Here Stet & Burke (2003:8) acknowledge that it is in these multitudes of selves or identities that the “overall self” is created.

Based on the literature in sociology and psychology both cognition and context play a key role in how identities are created and recreated. Mead clearly emphasizes this intermix between cognition and context in interaction in society when we states:

“We carry a whole series of different relationships to different people. We are one thing to one man and another thing to another. There are parts of the self which exist only for the self in relationships to itself. We divide ourselves up in all sorts of different selves with reference to our acquaintances. We discuss politics with one and religion with another. There are all sorts of different selves answering to all sorts of different social reactions” (Mead 1934:142).

So far the above discussion has only insinuated the connection between the self and society, however, more precisely, this is a process better known as socialization. Socialization creates the distinction between identity in the mind of the individual and identity as part of the interaction with society. O'Brien (2011:174) connects identity with social context by way of language. She writes:

“Humans become social creatures through their ability to formulate language-based systems of meaning. We live in a symbolic universe rather than a direct state of nature. Humans organize their existence into a meaningful reality through symbols, and language is the primary form of symbol.”

In socialization we imply and recognize that there are expectations and social routines that are norms we follow in a society. Socialization is thus, “a process of learning the gestures, cues and expectations that enable us to engage successfully in social performance of roles and identities” (O'Brien 2011:177). Socialization happens to individuals primarily as children, what Mead (1925:269) refers to as “play stage”, where we learn to understand social cues and build up our mental categories and social scripts (more on this under perception); this process does continue throughout our life, what Mead refers to the “game stage”, however, more emphasis is placed on reflection and on proving or disproving our assumptions. One could conclude as Mead (1913:380) wrote that, “The

growth of the self arises out of a partial disintegration, -- the appearance of the different interests in the forum of reflection, the reconstruction of the social world, and the consequent appearance of the new self that answers to the new object”.

Now that we have the fundamentals down we can further link the cognitive and the contextual to practice. Here I ask, rhetorically, what is the significance of identity in this study? This chapter explores individuals and their interactions. It has been recognized above that identity has to do with the individual AND the individual in society. In other words, identity affects among other things how individuals interact. This study aims at improving innovation in a multi-national company by enhancing collaboration. This study has identified three main components of collaboration processes one of which is the individual and their interactions. It is significant to explore identity since individuals are drivers of interaction and identity affects how individuals interact. The following excerpt from Weick helps to put these thoughts into perspective.

“Identities are constituted out of the process of interaction. To shift among interactions is to shift among definitions of self. Thus the sensemaker is himself or herself an ongoing puzzle undergoing continual redefinition, coincident with presenting some self to others and trying to decide which self is appropriate. Depending on who I am, my definition of what is “out there” will also change. Whenever I define self, I define “it” but to define it is also to define self. Once I know who I am then I know what is out there. But the direction of causality flows just as often from the situation to a definition of self as it does the other way. And this is why the establishment and maintenance of identity is a core preoccupation in sensemaking”. (Weick 1995:20)

Above Weick states that “identities are constituted out of the process of interaction” and the process of interaction in organizations has changed over time from a focus on necessity to also include a focus on interest. The increase in autonomy and the complexity in large multi-national knowledge networks allows for individuals to create their own paths for task completion. This freedom allows that interest also guides interaction. Therefore the diversity of interaction provides individuals with the opportunity to continuously redefine themselves. If identity is an outcome of interaction, then we can presume that how we perceive ourselves and our environment including interactions, how others perceive us and how we believe others perceive us has a great impact not only on our identity but also on interaction.

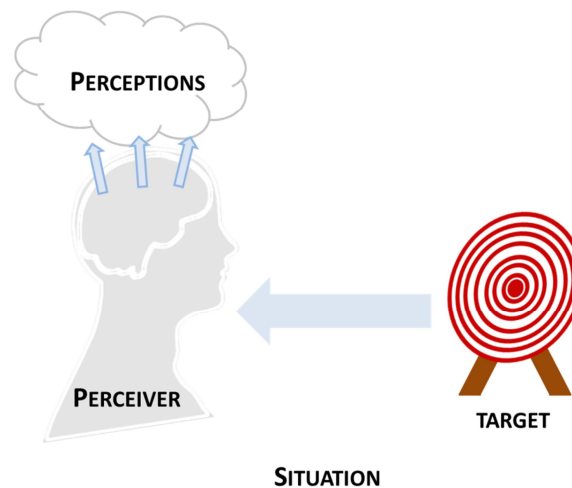
The brief review of the concept of identity recognizes the multi-dimensional, context and time dependent nature of this study’s case company, Grundfos R&D. Identity should be understood as a “process” rather than a state (Alvesson & Willmott, 2002) that is dependent on 1) the social structures individuals are exposed to or aware of 2) socialization of individuals, including how individual’s process and make sense of socialization, 3) the interaction between the context and the cognitive voice (as in the reflected selves) and 4) the resulting perceptions that will be used to build on new experiences and new perceptions. The connection between identities and perception are quite clear and therefore the next section explores the concept of perception.

11.2 Perception

“Perception is the process of interpreting the messages of our senses to provide order and meaning to the environment”; it helps individuals “sort out and organize the complex and varied input

received” (Johns 1996:88). In human interaction perceptions are crucial in our understanding of ourselves and each other. The very definition of perceptions refers to the interpretive paradigm in that it is a process by which humans interpret to provide order and meaning to the social world. Bruner’s Model of Perception illustrated below depicts a perceiver, the target and the situation/context that is being perceived and the perception in the mind of the perceiver. Individuals interpret and infer the messages or cues they receive in order to make sense and organize their understanding of their environment and the different situations they encounter. Another aspect of perception is that while we believe we are unbiased in our attributions of others are perceptions are highly selective, thus causing all sorts of biases. Miller and Steinberg (1975) argue that there are three types of cues that specifically guide our perceptual process: 1) cultural cues, 2) sociological cues and 3) psychological cues. I will come back to them at a later point in this review.

Figure 52- Bruner’s Model of Perception



Source: Inspired by Bruner (1957)

Jerome Bruner (1957:124) was the first to identify the significance of perception in creating identity for our understanding of the world around us; in other words—attributions. There are two key features of perception he identified—perceptions are *categorical* and perceptions are *representative*. Firstly, “all perceptual experience is necessarily the end product of a categorization process”. This means that we have already identified and attributed reasoning to another’s behavior, for example, long before we even leave the meeting, we have already made several attributions. It is an unconscious process just as learning to feel your way through your bedroom at night so as not to trip over things; we don’t think about it, we just do it. Secondly, Bruner identified that all perception is “predictive to varying degrees” in other words, that it is verifiable or representative.

Gudykunst (2003:187) following Bruner’s concepts expands on the above and identifies three critical aspects of perception processes: 1) Perceptions are selective, 2) Our perceptions involve categorizations and these categories are not isolated from one another, and 3) Rigid categories inhibit effective communication. Individuals cannot process all of the information available, if we did

we would experience overload and therefore cues/ information is placed into metaphorical boxes or categories in our mind. However, when these boxes become too narrow in explaining cues in the context they can cause confusion and misinformation.

Bruner (1957:132) states:

"The accessibility of categories I employ for identifying the objects of the world around me must not only reflect the environmental probabilities of objects that fit these categories, but also reflect the search requirements imposed by my needs, my ongoing activities, my defenses, etc. And for effective search behavior to occur, the pattern of perceptual readiness during search must be realistic: tempered by what one is likely to find in one's perceptual world at the time and at the place as well as by what one seeks to find."

In other words, when we create percepts we of course need to take our current environment into consideration. A simple example can perhaps help in clarification. As much as I would like to live by the beach, the fact that I do not stands to reason that I should not assume that there will be a beach near me until I decide to move closer to the beach. I have to further evaluate the *need* I have to live by the beach contra my other needs, and *motivations*. I can therefore, look out into my world and rationalize that living 10 kilometers from the beach is *not that bad* and I could get there relatively more quickly than I used to in the past. I therefore *choose* to perceive that I indeed live as close to the beach as I can given my current situation. Therefore, I deduce I live by the beach, my understanding is wrapped in different attributions about my life, needs, motivations; this is how misunderstandings can ensue, in this case, should others' interpretations of the proximity of closeness be different than mine own.

Tsoukas and Chia (2002:573) take notice of the work of Rosch and Lloyd (1978) when they acknowledge that according to Rosch and Lloyd (1978), "there is a great deal of structure to a category". Tsoukas and Chia (2002:573) surmise that "categories... are radically structured: There is a stable core in a category, consisting of prototypical members [and events], which accounts for the stability with which the category is often applied. However, there is also an unstable part, consisting of non-prototypical members, which accounts for the potential change in a category, which its situated application may bring about". Therefore, "conceptual stability comes from the prototype structure of categories and the stability of the background assumptions and understandings that define a communal practice" (Tsoukas and Chia 2002:574). Tsoukas and Chia (2002:575) conclude that "new descriptions (i.e., new understandings) are the result of the intrinsically human ability to be reflexive—to reflect on one's behavior as an observer" (we will explore the concept of reflexivity later in this chapter).

The following seven propositions that Bruner posited are integral as general properties of perception and provide further elaboration on his thoughts. The table below reviews these and gives an explanation.

Table 20- Seven Propositions of Perception by Bruner (1957)

	Proposition	Explanation
1	Perception is a decision process	We select, infer, identify and categorize to understand
2	The decision process involves the utilization of discriminatory cues, as do all decision processes.	The properties of the object or event allow us to place in correct categories, e.g., an apple, is red, is particularly round and has a smooth skin, tastes sweet.
3	Cue utilization processes involve the operation of inference.	Using inference presupposes that learning of environmental probabilities and invariances relating cues to cues, and cues to behavioral consequences.
4	A category may be regarded as a set of specifications for grouping similar situations, people, things	There are some cues that are more important for the given perceiver for a matter of reasons such as their history, experiences, values, etc., these cues take precedence when examining an event, person, object; these are difficult to alter and limits the variability of categories.
5	Categories vary in terms of their accessibility and accessibility aims at minimizing the surprise value of the environment to maximize the attainment of sought-after objects and events.	How quickly you can identify and infer an attribution in order to make quick sense of your world... to get what you want.
6	Veridical Perception- coding stimulus (cues) inputs in appropriate categories such that one may go from cue to categorical identification, to correct inference or prediction of other properties of the object so categorized.	All this means is that perception of one event or person can and will be used at other times, therefore it is important that categories and predictions be as accurate as possible and that individuals verify and reflects on how we decide
7	Under less than optimal conditions, perception will be veridical in the degree to which the accessibility of categorizing systems reflects the likelihood of occurrence of the events that the person will encounter.	Current perception is only as good as previous perceptual processes. This is why it is so difficult to change old habits. Dispositional attributions of ourselves become solid unwavering categories that blind or shield us from seeing other cues that could create new attributions and new categories for understanding.

Source: *expanded from and inspired by Jerome Bruner (1957:132-133)*

Bruner (1957:133-141) also created four general types of mechanisms for mediating perceptual readiness: 1) grouping and integration 2) access ordering 3) match-mismatch signaling and 4) gating. However, since these are more procedural tools they will be presented in PART III of this chapter as a further elaboration here would detract from this current discussion.

One of the main reasons why perception is a key factor in understanding the individual is that perceptions lead to attributions; how we attribute meaning to the symbols/cues we observe in any given context. Said differently Gudykunst (2003:192-193) cites Heider (1958) who likens individuals to scientists “that are trying to make sense of the world”. Heider elaborates as follows; individuals “are motivated by practical concerns such as our need to simplify and comprehend our environment and to predict others’ behavior. To meet these needs, we try to get beneath external appearance to isolate stable underlying processes”—dispositional properties; by dispositional properties Heider

means that perceivers use other's motives to understand their experiences. In other words, dispositional properties or attributions are an "explanation for behavior based on an individual's personality or intellectual characteristics and thus reflects the true person" (Johns 1996:98) and I would add here that perhaps it is only the aspects that we know of that person. In line with the previous discussion on identity it could be that we only know this person in a given context and therefore are only aware of a part of that person and not the total person. "If we explain a behavior and that the behavior as a function of intelligence, greed, friendliness, or laziness we are making dispositional attributions" (Johns 1996:98), while if we use the context of a given situation to explain another person's behavior then we are using situational attributions. Dispositional attribution explains the extreme focus on valuating others based on their personal characteristics, perhaps this is why we say "actions speak louder than words" to explain that the merit of our actions is integral in the self-image we create and share with the world. For example, "Casciaro (1998) found that an actor's personality, hierarchical position, and centrality in the network affected the accuracy of her perception of the network (see also Kenny, 1994)" (Borgatti and Foster 2003:998). It make seem like a cliché but the power of our perceptions do have a great impact on our thoughts and how we choose to interact because of them.

Another scholar Kelley (1967) has also conceptualized how we make sense of our interactions with others. Kelley identified an analysis of covariation that allows perceivers to assess how much of another's behavior happens "in the presence and absence of various causes". This analysis explores three principles: 1) *consistency*, 2) *distinctiveness* and 3) *consensus*. The principle of consistency simply indicates that there is a sense of regularity towards the behavior and one can assume and begin to "put your guard down" when it comes to attempting to make sense of this person's cues. Therefore, as the perceiver we begin to consider this behavior true to the person and "to their motives"; "high consistency leads to dispositional attribution" (Johns 1996:99). Distinctiveness simply means to consider if the behavior one is experiencing is specific to a given situation or a common one observed normally. If the behavior is perceived to be situation specific then it does not reflect the true self of the individual, while if the behavior is specific to the individual then we focus on dispositional attributions. Lastly, consensus evaluates how common the behavior is among others, i.e., social norms. Thus low consensus behavior that is not distinctive to a given situation leads to dispositional attributions explicating the person's true self or motives.

Misperceived cues and misplaced attributes for explaining others behavior lead to misunderstandings; lack of information is cited to be the most significant reason for misunderstanding. The literature calls this *Actor-Observer Effect* and gives two specific reasons for the confusion. First the observer is simply not privy to what the "environmental constraints and advantages" are and secondly, the observer again is not aware of the private thoughts, feelings, needs and motivations of the actor (Johns 1996:101).

Coming back to Miller and Steinberg (1975) presented earlier, that identified three types of cues (cultural, sociological and psychological) used to understand our encounters/exchanges/interactions with others, in events and/or with objects. Having discussed and reviewed the literature thus far we are more able to further explore these three types of cues that affect the percept creating process and leads to how we allocate attributions that give meaning to behavior.

Cultural cues are guided by the cultural manifestations common to any group of people. This can be compared with consistency and consensus of Kelley's covariation analysis above. Cultural cues that are common in a given setting create high levels of consensus and consistency, however, on the other hand this type of perceptual categorization is what leads to too narrow of categories and stereotyping of individuals and groups. Not having adequate information (categories) to make sense of foreign cultures, places undue stress on individuals and explains for the "uneasiness and perceived lack of control most experience" (Miller and Sunnafrank 1982:226-227 in Gudykunst 2003:26). There are two main factors that according to Miller and Steinberg (1975) influence the accuracy of our perceptual processes: 1) experience in said culture and perceiving other's cultural manifestations through your own cultural categories; ultimately destined to fail in making accurate perceptions. Making even reasonable interpretations of an individual's behavior based on cultural dimensions is a sticky business that has backfired in practice many a times. More so today it is integral to consider a combination of cultural cues (since we apparently cannot help it) together with an individual's self construal(s) (how an individual sees himself and how they build up their identity(ies) and role sets (more on role-sets later). "The focus on the self construal is important because how individuals conceive of the self is one of the major determinants of their behavior" as discussed above under identity and I would add how they in turn see/perceive the world (Gudykunst 2003:66). *Sociological cues* are focused on the group memberships of those being perceived. Where do they belong? Where do they want to belong in the future? These two questions are the types of inquiry a perceiver would ask in order to make attributions about their behavior. Membership may be voluntary or prescribed by dispositional attributes but could also be perceived to be situational by perceived association regardless if actual association truly exists. Just as we discussed above categories are not isolated from one another and neither are memberships, as they can overlap and cause misleading percepts to be developed, for example, Bikers can be Christian, a janitor can sing opera or a dancer can be a college graduate. *Psychological cues* are focused on identifying what Kelley called the principle of distinctiveness. According to Dance and Larson (1972:56 in Gudykunst 2003:27) here the focus is to consider how "each participant relates to the other in terms of what sets the other apart from most people". They take into consideration each other's individual differences in terms of the subject and occasion".

Along the same lines of perception, sensemaking attempts to also understand ones environment. "Sensemaking is a catch-all phrase describing processes that people use to impose or derive structure or meaning when they experience complex, ambiguous or stressful situations" (Volkema, Farquhar, Bergmann (1996:1441). Karl Weick (1995) argues that, "sensemaking is *not* a metaphor" (p.15). Moreover, he states that, "sensemaking is about authoring as well as interpretation, creation as well as discovery" (Weick 1995:8). "Organizational sensemaking is first and foremost about the question: How does something come to be an event for organizational members? Second, sensemaking is about the question: What does the event mean?" (Weick et al 2005:410). Dervin, Foreman-Wernet and Lauterbach (2003:116) when explaining Weick's work states, "There is no such thing as organization. There is only organizing", this point exemplifies the procedural aspect of sensemaking. According to S  derberg and Vaara (2003:28) there are two key assumptions in sensemaking: "1) it is grounded in identity construction and 2) it is closely related with organizational action". People make sense of themselves through how they make sense of their surroundings; the context they find themselves in. Furthermore, in order for individuals to make sense there must be some type of contextual phenomena, in other words, social action, taking place.

Sensemaking is useful as it creates awareness not just for your own emotional state, perceptions, beliefs and behavior but through the process of reflection one has the possibility of understanding other perspectives. After reviewing Weick's (1993, 1995, and 2009) works on sensemaking I have identified five basic tenants:

1. Reality is an ongoing accomplishment that emerges from efforts to create order. Just as I addressed in the culture and network chapters, individuals and organizations alike need to organize in order to understand (Weick 1993:635).
2. Sensemaking uses reflection as a process of evaluation (Weick 1993:635).
3. "Sensemaking enlarges small cues"; in the search for understanding we search the contexts to identify "small details that fit together" (these are the scripts discussed under perception) scripts are the details that complete the picture of the varying categories/ schemata (Weick 1995:133).
4. Interaction removes doubts from propositions: confirming or disproving precepts (Weick 1995:133).
5. Invention and Interpretation [are] understood as discovery. In other words, "people make sense of things by seeing a world on which they already imposed what they believe" (Weick 1995:15). This goes back to the discussion of underlying values and beliefs that predispose what cues we choose to put weight/ value on when we perceive to understand. Weick (2009:15) defines assumptions as those that "provide a reality that is taken as given, a reality that exerts influence over what one notices and ignores and labels as significant". There is a significant link between assumptions and the process of discovering meaning through interpreting percepts about any given context.

I have recognized in reviewing the literature thus far that there are three common underlying factors necessary in understanding *relations, perception and cognitive-behavioral structures* in general:

1. Experience (historical archive; here I include the three cues from Miller and Steinberg)
2. Motivational state (needs)
3. Emotional state (emotions)

11.2.1 Experience

First, an individual's experiences seem to be the most influential for the percept building process as past experiences lead to expectation building. This point is comparable to the relational approach in the Network Chapter where Johanson et al (1994:158) acknowledge that our experiences or the history that is created through such experiences, what they call "intertemporal dependence", acts like a great force in the development of relationships. From reviewing the literature in the Culture Chapter we know that not everyone uses the same underlying values and now we can further elaborate on that point by expanding that it is also a matter of the individual's perceptions being influenced by their history; the perceiver takes in cues that are unfamiliar (from his own experiences and these include cultural manifestations foreign to him). Weick (1995:26) writes,

"The meaning of a lived experience undergoes modifications depending on the particular kind of attention the Ego (the person) gives to that lived experience (Schutz 1967:73). Meaning is not "attached to" the experience that is singled out. Instead, the meaning is in the kind of attention that is directed to this experience".

For example, if the experience was a positive and influential one then the attention it will give the individual will be one of great inference to the continuation of the creation and verification of their self-concept. This is of course connected to the needs, motivations and priorities linked to the experience and influenced by the experience.

11.2.2 Needs

Secondly, our needs whether primal, basic or complex, psychological ones, refocus how we experience the things around us. In different periods of time, this could result in the obtaining of different outcomes even when presented with the same scenario, purely contingent on the current needs we are facing. Needs drive and motivate individuals. It is through needs that individuals satisfy their impulses and identify what they consider to be a priority; usually dictating their behavior. Wilson (2004:150) reinforces the notion that motivation is inherent in finding out what satisfies when she states that *motives are believed to function to energize and direct behavior*. "Although needs are very much actors' attributes, they evolve through relationships and are shaped by relationships. Needs become relationship specific when actors associate specific needs to be satisfied by specific relationships", thus developing correlating perceptions between their needs and those that can satisfy these (Todeva 2006:99). According to Maier, Prange, and Rosentiel (2001:22) "one particularly serious obstacle to the recognition of a need to learn is known as the illusion of validity", which means there exists a false confidence between the stimuli and the percept/judgment being made. This can be likened to what is known as a "self-serving bias" (Johns (1996:102) and additionally it may also be compared to what Argyris calls "perceptual defense" where individuals deny the reality to protect themselves from embarrassment which will weaken their identity and self-concept and may risk their status or membership in their networks.

11.2.3 Emotions

Lastly, our emotional state also affects how we perceive cues; love, for example, provides us inner peace and tranquility making us more light hearted and less logical and rational. Frequently our needs and emotions unconsciously influence our perceptions by causing us to perceive what we wish to perceive. Using figure 52 above as an example, the target perceives by way of interpretation and adds meaning to what they interpret with help of the three parameters mentioned above. All this is dependent upon the situational context it all occurs in; in other words emotions are episodic. Emotions are fundamental for individuals to be able to adapt to their environment. "Emotions not only play a major role in preparing the individual's behavior, they also have powerful effects on social interaction" (Scherer and Tran 2001:372). "Emotions are faster than our rational process" (Brück and Kainzbauer (2009:86). Most theorists in the field acknowledge a "multi-componential definition of emotion that includes physiological aware, motor expression, subjective feelings and often also action tendencies and cognitive processes" (Scherer and Tran (2001:371). Nesse and Berridge (1997:64 in Scherer and Tran 2001:371) state: "Emotions are coordinated states, shaped by natural selection, that adjust physiological and behavioral responses to take advantage of opportunities and to cope with threats that have recurred over the course of evolution. Thus, the characteristics and regulation of basic emotions match the requirements of specific situations that have often influenced fitness. Emotions influence motivation, learning and decision, and therefore, influence behavior and ultimately fitness". Emotions can be understood from a physiological perspective, however, there is literature on becoming more aware of our emotional responses—also

known as emotional intelligence that it can create an awareness for our emotions to improve our responses to different stimuli in various settings.

Emotional intelligence is also understood by some as soft skills, personality and/or the character of an individual. It is important to acknowledge what drives us as humans, our impulses and reactions to stressful situations are primarily guided by our emotions; emotions are faster than our rational processes" (this stems from the contribution of autophotography for cross-cultural knowledge transfer in Brück and Kainzbauer (2009:86). It is initially, as Goleman (1998:82) writes, about self-control; mastering responses to two primal emotions (1) dealing with upsets and (2) handling impulses, that will move an individual through to gaining emotional intelligence. These two primal skills, according to Goleman (1998) are the key to unlocking the "core of the five emotional competencies":

1. Self-control
2. Trustworthiness
3. Conscientiousness
4. Adaptability
5. Innovation

The figure below sets up Goleman's (1998) framework for improving emotional competencies. The figure is followed by a table illustrating the breaks down of some of the points.

Figure 53- Framework for emotional competencies

	<i>Self</i> <i>Personal competence</i>	<i>Other</i> <i>Social competence</i>
<i>Recognition</i>	<i>Self-awareness</i> <ul style="list-style-type: none"> • Emotional self-awareness • Accurate self-assessment • Self-confidence 	<i>Social awareness</i> <ul style="list-style-type: none"> • Empathy • Service orientation • Organisational awareness
<i>Regulation</i>	<i>Self-management</i> <ul style="list-style-type: none"> • Self-control • Trustworthiness • Conscientiousness • Adaptability • Achievement drive • Initiative 	<i>Relationship management</i> <ul style="list-style-type: none"> • Developing others • Influence • Communication • Conflict management • Leadership • Change catalyst • Building bonds • Teamwork and collaboration

Source: Goleman (2001) p.2

Table 21- Examples of personality traits that promote positive interaction

	Self-Personal competence	Other Social competence
Recognition	Emotional Self Awareness <ul style="list-style-type: none"> • Individuals know which emotions they are feeling and why • Realize connections between there feeling and what they think, do and say • Realize their feelings affect their performance • Have a strong awareness of their guiding values and goals 	Empathy <ul style="list-style-type: none"> • Individuals are attentive to emotions cues and listen well • Show sensitivity and understand other's perspectives • Help others based on their understanding other's needs and feelings • Offer useful feedback and identify people's need for further growth
Regulation	Trustworthiness <ul style="list-style-type: none"> • Individuals that act ethically and are above reproach • Build trust through their reliability and authenticity • Admit their own mistakes and confront unethical actions in others • Take tough principled stance even when unpopular to do so 	Team-work and Collaboration <ul style="list-style-type: none"> • Individuals here promote a cooperative working climate • Spot and nurture opportunities for collaboration • Balance a focus on task with attention to relationships • Draw all members into active and enthusiastic participation

Source: *Inspired by Goleman (1998)*

Individuals use their percepts to create categories (also known as schemata²⁹) and theories (also known as scripts³⁰) to make sense of the stimuli (cues) about the world around us. This can be likened to what Argyris (1991) calls "theory of action—a set of rules that individuals use to design and implement their own behavior as well as to understand the behavior of others". It is as Argyris writes if we had to "reason anew in every situation...the world would pass us by". Overall, the above three parameters underlying factors are useful for improving cognitive and relational processes.

DiMaggio (1997:269-70) distinguishes between two types of cognition: 1) automatic cognition, which refers to "implicit, un verbalized, rapid and automatic and 2) deliberate cognition, which refers to "explicit, verbalized, slow, and deliberate"; the latter draws focus on attention and motivation as drivers of purpose. We will now explore the connections between cognition and perception below.

11.3 Social Cognition & Perception

"A growing focus on complexity and realism suggests a new direction for the analogy between physical perception and social cognition: Both represent difficult, noisy tasks that require flexibly employing multiple processes" (Zaki 2013:300). Zaki (2013:299) suggests that combining both social cognition and perception theories can facilitate the way we make sense of our world. He introduces

²⁹ Schemata are cognitive frameworks representing the structure of objects and concepts (Maier, Prange, and Rosenstiel 2001:19)

³⁰ Scripts are special kind of schemata that refer to events (Maier, Prange, and Rosenstiel 2001:19)

two key concepts in social cognition: 1) experience sharing- “describes perceivers’ tendency to vicariously take on social target’s internal states, facial expressions and postures” and 2) mentalizing- “refers to perceivers’ ability to reason explicitly about targets’ likely states based on goals, intentions, and behavior”. A key feature that is found in the perception literature Zaki (2013:300) wishes to incorporate cue integration—“the interaction between multiple environmental signals and information processing streams”—in social cognition. Zaki (2013:300) further deliberates that a “cue integration approach posits that, like a perceiver integrating over vision and audition when encountering multimodal cues, perceivers might employ multiple cognitive processes to infer conditional probabilities in the social domain”. Zaki’s (2013:306) considerations are significant for this study because they suggest that “social cognitive processes are fundamentally interactive”.

Fiske (1993) who follows a pragmatic perspective and adheres to Bruner-type philosophy has extensively reviewed social cognition; however, with regards to this study I will only be taking up three of her concepts: 1) accuracy with regards to consensus, acquaintance, and expectations, 2) structure with regards to meaning-creation and 3) goals and control with regards to motives.

The first concept that I want to address from Fiske (1993:157) is that of *accuracy of perception*. Fiske cites Swann (1984) who argues “that ... perceivers tend to believe whatever is accurate for their everyday purposes, in light of their interaction goals, within their habitual contexts, with their usual partners”. This “workable balance” emphasizes the “interplay [between] external and internal structures” Fiske (1993:156). Along the same lines she notes the “pragmatic argument that people’s judgments are accurate if they are useful”. Therefore, one can conclude that, “accuracy is not absolute; it depends on one’s purpose” and may be connected to one’s emotional state as well (Fiske 1993:156). With regards to accuracy of perception and the knowing of others (acquaintance), Fiske (1993:157) states that “acquaintance can improve observer consensus with targets and the targets’ peers...but it need not do so”. This is as explained above the more dispositional cues are identified the more observers identify with the actor’s cues and therefore understand their behavior. Through time they develop consistency and begin to understand underlying value sets. The more inline these underlying value sets are with the other members of the group the more consensus and more understanding is achieved. However, this creates expectations and inconsistent behavior leads to misunderstandings and confusion in the observer as they have to reevaluate their categories. However, sometimes individuals again based on their own history/experience, motivations/needs and emotional state(s) place unintended expectations on others. This can have a negative effect on how relationships develop. Fiske (1993:158) states that “good-enough accuracy, or at least substantial consensus, has obvious utility for smoothing social interaction”. Moreover, being able to adapt and re-categorize cues in turn aids individuals to learn awareness habits. For example, “perspective-taking in turn improves the listener’s comprehension” (Krauss & Fussell 1991 in Fiske 1993:158). In other words, taking account for the other’s situation (the information we are missing about the situation as described earlier) and as Fiske writes the “psychological meaning of behavior” (the thoughts inside the mind of the actor we are observing) will aid in our perceptual and predictive accuracy (see also Fiske 1993:158).

The second topic under discussion from Fiske is that of structure. Just as we discussed in the Culture chapter about organizing and how integral it is in business, it appears that is a natural human condition to want to organize. Here too we find that as we have reviewed the concept of perception

we need to organize all the stimuli we are bombarded with every day, in order to make sense of our world but also as to not become overwhelmed with information. Therefore, Fiske (1993:166) asks, what are the core categories that individuals use to organize themselves and others? In her review she cites five top categories as 1) gender, 2) age, 3) race, 4) appearance and 5) relationships and all are of a visual quality. However, she also points to the importance of *sub-types of categories*, such as what kinds of elderly, women, and Hispanics being perhaps more important categories since “they seem to convey the most about the disposition of the other”. It should be mentioned here that cultural origins can have an effect on what top categories or sub-categories individuals use to evaluate others. Nonetheless, it stands to reason that visual categories are the most important since we usually experience our world through sight (this will be linked to how individuals learn later). Categories are used to make inferences, to evaluate and distinguish as well as make sense of both group and individual cues (see also Fiske 1993).

The third and last topic I will discuss from Fiske is goals and control with regards to motives. Fiske (1993:171) quotes James (1890/1983:456): *“This whole function of conceiving, of fixing, and holding fast to meaning has no significance apart from the fact that the conceiver is a creature with partial purposes and private ends”*. The point here is regarding the internal motivations that drive individuals; that in a sense control them to think, feel and act the way they do. The focus of individuals in her article in 1993, I believe is still most applicable today when globalization, on-demand media connectivity and knowledge economies drive business; it is now more than ever that individuals are to be understood as “motivated tactician[s] choosing among a number of possible strategies, depending on current goals” (S. Fiske and Taylor 1991 in Fiske 1993:172). If individuals current goals, needs and motivations are so important then it is important to understand the triggers that enable or impede individuals from attaining the necessary information to make the best decisions. Fiske reviews two types of motives that affect perceptual accuracy: 1) *increasing the costs of being wrong* and 2) *increasing the costs of being indecisive*. According to Fiske’s review (1993:173) “people can be more accuracy-oriented if so instructed, but they can also categorize more if so motivated”. Suggestions, the social structure, outcome dependency, and cooperative interdependence are all forms of increasing the costs of being wrong (Fiske 1993:173), because these all create a dependency-expectation relationship. For example and specifically relevant to this study, “outcome dependency seems to make people work harder at whatever task they undertake” (Fiske 1993:173) and furthermore, Fiske (1993) cites Matheson, Holmes and Kristiansen (1991) that states, “having an explicit goal of behavioral prediction makes people rely more on their own interaction with a target and less on prior expectancies”. In other words, if people working together on a project have set their minds to succeed, then their interactions are going to prioritize this prediction instead of whatever past experiences they have had in a group or individually. According to Fiske (1992:884) goals can be further divided in terms of speed or accuracy where speed refers to the efficiency that encourages the need to confirm expectancies and where accuracy refers to complex examination of experiences (in Weick 1995:27). The second motive that can affect perceptual accuracy is increasing the cost of being indecisive. “Perhaps the most striking demonstration of this phenomenon is people’s propensity to stereotype when they are at a low point of their circadian cycles³¹” (Fiske 1993:175). Any type of stressor can have an impact on the

³¹ Circadian cycles represents when individuals motivation or ability to search and think carefully is at its lowest (Bodenhausen, 1990)

desirability of individuals to be thorough (accurate) in the evaluative process; other examples of stressors are time pressures, noise, unpleasant weather conditions or personal stressors such as moving, losing a loved one or divorce; thus, situational constraints preclude accuracy. According to Fiske (1993:176) taking action “discourages open-mindedness not only in the judgment at hand but also in other judgments made while in the same mindset”. We do not always have time to delve into issues and thoroughly consider and reflect all angles and of course this affects our perceptual accuracy. Coming full circle on the last topic is the need of individuals to want to control their environment. And as stated above motivation³² can affect how we interpret the world around us. According to Maier, Prange and Rosenstiel (2001:23) motivation “refers to the initiation, intensity and persistence of action”; moreover, they explain that motivation, “originates in an interplay between a person’s and a situation’s characteristics”.

I will conclude this section with a thought to ponder from Tsoukas and Vladimirou (2001:989):

“My judgment takes the raw data and raw feels of the present and names them. I decide to take this action because I deem this situation to be of this kind. The novelty of situations, the newness of the present, is tempered by this judgment. Of course my judgment may be wrong. After all, it is only a guide to action, a tentative hypothesis, which may prove erroneous. The expected results may not occur; I need to reflect on this fact and revise my judgment”. The above can be equated to the process of learning and obtainment of knowledge. Thus, the section that follows, explore learning and knowledge.

11.4 Knowledge & Learning

As I stated at the introduction of this chapter it is through understanding knowledge processes that we will have the ability to better understand individuals and their interactions. So far, PART I, has explored identity, perception, sensemaking and social cognition and these discussions point to how individuals choices are influenced by both external stimuli as well as internal cognitive processes, such as the evaluation of past experiences, perceived needs and the individual’s emotion state. Cognitive processes are thus influenced by how individuals learn to learn and learn to understand³³—these are purely methodological underpinnings for human beings. Therefore, it is necessary, I believe, to consider how individuals learn and thus obtain knowledge.

This section does not assume to provide a thorough review of knowledge and learning, it would be naïve to assume a section could accomplish such a feat; however, *the purpose of this section is to review basic and necessary aspects of learning and knowledge that are essential for understanding the individual and helpful for answering the questions set forth in this study.* As such I have organized this section as follows. I will begin by defining learning and knowledge through the individual. Thereafter a discussion regarding organizational learning and knowledge will follow. I will be brief in my review in order to cover several concepts.

³² Motivation is a state in which an individual directs his or her activities to a desired goal (Geen 1995 in Maier, Prange and Rosenstiel 2001:23).

³³ This thought is underpinned by Vygotsky’s principle achievement that focuses on the cultural history theory of psychology development. (Davydov and Kerr 1995)

11.4.1 Defining Knowledge & Learning through the Individual

Knowledge is created through learning and learning creates opportunities to develop additional connections for further knowledge creation. John Dewey connected thought and action through his conceptualization of learning. Dewey (1916:114) wrote:

“Thinking, in other words, is the intentional endeavor to discover specific connections between something which we do and the consequences which result, so that the two become continuous. Their isolation and consequently their purely arbitrary going together, is cancelled; a unified developing situation takes place.”

Thus, I do not wish separate learning and knowledge because I strongly believe given the above discussion as well as based on the data there exists a symbiosis and treating them separately would deemphasize this relationship. As exemplified under the previous section, I further agree with the conceptualizations of Tsoukas and Vladimirou (2001:976) that “knowledge is the individual’s capability to draw distinctions, within a domain of action, based on an appreciation of context or theory, or both”. Furthermore, adhering to Tsoukas and Vladimirou’s own acknowledgement of Polanyi’s work on identifying the distinction between tacit and explicit knowledge, I too acknowledge that “since all knowledge has its tacit presuppositions, tacit knowledge is not something that can be converted into explicit knowledge, as Nonaka and Takeuchi (1995) have claimed” in the SECI Model. Instead *knowledge should be seen as a process of discovery through interaction*. As Polanyi (1975:44) himself wrote, “All knowing is personal knowing—participation through indwelling”.

The literature on learning is extensive, for the purposes of this study I will limit the definition to the most basic one: learning is defined as “the acquisition of knowledge” (Oxford dictionary). As I surmised above these two concepts—learning and knowledge—are closely linked. The literature makes a distinction between 1) *behavioral learning*, where the focus is on acquiring knowledge and 2) *information processing* type of learning, where focus is placed on storage, retrieval; with a focus on knowledge the emphasis changes towards the “*substance of knowledge*” (Maier, Prange, and Rosentiel 2001:21).³⁴ For the purposes of this study I will focus on the second type as the behavior learning literature focuses on conditioning through “the formation of associations between stimuli and the reactions or between reactions and consequences”. Other behavior learning is focused on providing role models; this for example, can be positively experienced through the charismatic individual or star pupil, that motivate others to follow suit with the promise of achieving similar rewards. However, there is also negative modeling in the sense of an employee that is reprimanded or fired for a specific unwanted behavior and this sets the tone in the organization; this is a model of punishment. Because I am more interested in inter-relatedness of the cognitive and interactive processes of learning and knowledge co-creation I will focus on the second type of learning processes that follows my thinking more closely.

Just as described above in the perception model much of the same is true here, “encoding encompasses processes of perception and interpretation that are necessary for transforming

³⁴ Here the distinction is also found between learning and knowledge where knowledge is focused on the content and use of the information.

external stimuli into cognitive representations of those stimuli”, and “existing knowledge [also as discussed above] is also part of the process as well” (Maier, Prange and Rosenstiel 2001:19). Moreover, just as described under perception, if categories become too familiar then new stimuli will be incorrectly categorized. Here we can make a further distinction between knowledge; 1) ‘*knowing what*’ that is called *Declarative knowledge* consisting of facts, this knowledge tends to be explicit³⁵ and easy for individuals to retrieve and share, and 2) ‘*knowing how*’ that is called *Procedural knowledge*, “action-based knowledge”, tends to be tacit³⁶ and individuals are not necessarily aware of it. According to Anderson (1995 in Maier, Prange, and Rosenstiel 2001:21), “procedural knowledge is acquired in three stages: *cognitive*, *associative* and *autonomous*. The cognitive stage is primarily focused on problem-solving as discussed by Bruner; it is a decision process, that of evaluating, inferring, making judgments and propositions. The associative stage is primarily focused on declarative knowledge that is intertwined with previous experience and a greater understanding of the reasons behind the steps gives greater freedom and less error in task completion or perceptual understanding, for example. This leads to the last stage: autonomous knowledge, this is where individuals do and act without thinking about it, much likened to being on autopilot or second nature effect, e.g., riding a bicycle. Overall, there is great recognition in the literature for the significance of perception, called by other names such as “inductive learning” (Anderson 1995 in Maier, Prange, and Rosentiel 2001:21) and “casual inferences” or “casual judgments” (Einhorn and Hogarth (1986) all point towards learning from the environment through stimuli and encoding these to make sense of our context.

I would like to round of this discussion by presenting the concept of *experiential learning* by Kolb (1984) who emphasizes the “central role” of experience in the learning process. Kolb’s focus is to illustrate the integrative perspective combining “experience, perception, cognition and behavior” (Kolb 1984:21). Kolb’s theory is highly influenced by previous work on learning of Lewin, Dewey, and Piaget (for a review see Kolb 1984); the following table lists the characteristics/propositions that underpin the theory of experiential learning.

Table 22- Kolb’s Experiential Learning theory propositions

1	Learning is best conceived as a process, not in terms of outcomes.
2	Learning is a continuous process grounded in experience.
3	The process of learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world.
4	Learning is a holistic process of adaptation to the world.
5	Learning involves transactions between the person and the environment.
6	Learning is the process of creating knowledge.

Source: Kolb (1984: 25-38)

According to Kolb (1984:30) learning by its very nature is a “tension and conflict-filled process”. Kolb introduced four different kinds of ‘abilities’ or ‘modes’ that facilitate (the confrontation of different stimuli) the creation of new knowledge; these are listed below:

³⁵ Explicit knowledge is easily understood, articulated and shared through language (Pawlowsky 2001, Polanyi 1966).

³⁶ Tacit knowledge is based on individual experience and difficult if not impossible to transfer (Pawlowsky 2001, Polanyi 1966).

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

- 1) Concrete Experience (CE)-fully open and unbiased towards new experiences; incoming stimuli
- 2) Reflective Observation (RO)- the experienced stimuli above is encoded here into schemata
- 3) Abstract Conceptualization (AC)-organized inferences are given shape here
- 4) Active Experimentation (AE)-and resulting judgments and propositions are tested here

Much like the concept of perception discussed earlier the experiential learning theory further develops and makes a connection between the cognitive processes, and the contextual setting, giving the individual power to determine their behavior much like what Weick called 'enacted environment'. The only objection I would have to the four modes introduced by Kolb is the expectation that individuals should embrace new experiences unbiasedly. From my review of the literature on perception, social cognition and the above review on knowledge and learning it is clear that if individuals retain experiences, their cultural history as a form of learning (as Vygotsky would suggest), and create schemata based on these percepts than individuals cannot be expected to meet new experiences unbiasedly even though they may have a very strong desire to do so. Therefore, CE above should be understood as a spirit of openness towards new experiences.

The following table illustrates all the conceptualizations that underpin how I see (and how they apply in the context of this study) knowledge and learning that are reviewed in this chapter.

Table 23- Understandings of Knowledge and Learning

Summary of Knowledge & Learning Scholars & Concepts	
"For us, to talk about a process as "external" means to talk about it as "social." Every higher psychological function was external because it was social before it became an internal, individual psychological function; it was formerly a social relationship between two people"	(Vygotsky 1987:144-145)
"Thinking, in other words, is the intentional endeavor to discover specific connections between something which we do and the consequences which result, so that the two become continuous. Their isolation and consequently their purely arbitrary going together, is cancelled; a unified developing situation takes place."	(Dewey 1916:114)
"All knowing is personal knowing—participation through indwelling"	(Polanyi 1975:44)
"Learning is the process whereby knowledge is created through the transformation of experience"	(Kolb 1984:38)
"Knowledge that helps the actor to form purposes thereby leads to the enacting of values"	(Argyris et al 1985:37)
"Knowledge is essentially related to human action"	(Nonaka and Takeuchi 1995:58-59)
"Knowledge is the individual capability to draw distinctions, within a domain of action, based on an appreciation of context or theory, or both."	(Tsoukas and Vladimirou 2001:973)
"According to Lave and Wenger (1991) and Nicolini and Gherardi (2002) the process of knowing is situated in a cultural and historical context. These authors suggest that social interaction is a critical component of situated learning"	(Maimone and Mormino 2010)
"Knowing is a process of social participation"	(Maimone and Mormino 2010)
Learning is a process of discovery through interaction; knowledge is the outcome of this process of discovery.	Jensen 2013

11.4.1.1 Learning Styles

Having substantially and quite briefly reviewed the relationship between learning and knowledge and cognitive process (for the purposes of this study), we move on to address styles of learning. Learning styles are significant for this study for a number of reasons: 1) learning styles are part of cognitive make up in as such they affect the way we learn, 2) culture affects how we learn as early on as childhood, 3) learning styles can be compared to behaviors (identities) for the purposes of making propositions about our environment and 4) individuals are adaptive and reflective and therefore learning styles can be learnt; improved to fit the context and need.

There are several different typologies that explore learning styles. Some focus on the human condition and explore cognitive, cultural and action-learning perspectives (see Pawlowsky 2001:76) while others reference different styles of learning such as, “analytic, synthetic, experimental, interactive, structural and institutional” (see Miller 1996 in Buelens et al (2006:656). I will not elaborate on the above as it seems to be much controversy on what typologies are the best; this discussion will not be taken up here (for further elaboration see Hawk and Shah 2007). Instead I have chosen to present the VARK typology created by Fleming (1992) because from my review of the literature and understanding of the data it is the typology that comes closest to that which I would like to explain; and it is comparable to the experiential learning theory presented by Kolb above. Moreover, the reason I find these specific learning styles relevant to this study is because they can help individuals understand why culturally we have been educated to perceive information in specific ways. For example, Chinese children have to learn several thousands of characters before beginning primary school and this is in addition to typical developmental processes predisposing them to having a greater ability of learning visually. This point is not meant to draw attention to national culture distinctions, however, it is more so to emphasize the point that individuals learn differently and our various cultural backgrounds and experiences have predisposed us to favor specific types of learning styles over others. This may affect how individuals perceive, interact and thus learn later on in life. Fleming (1992) designed VARK to measure four different perceptual preferences for the input of information: visual (V), aural (A), read/write (R), and kinesthetic (K). Fleming took what has been traditionally seen a three point typology and deconstructed the Visual into Visual and Read/Write classifications, creating VARK. This makes sense as read/write then represents analytical-type learning styles while visual represents optical-type learning styles.

11.4.2 Learning & Knowledge in the Organizational Context: Connecting the Individual to Interaction & the Organization

The literature on learning has seen great developments over the past 50 years. From its inceptions focused on behavioral responses (conditioning) to what we now understand as a better focus on knowledge and cognitive perspectives. The reason why this is understood to be a better way of learning is that the focus shifts from what individuals do or how they react to a focus on how and what they know and thus, the interplay between learning and knowledge and knowledge and learning. In line with the perception and social cognition discussion above, Tsoukas and Vladimirou (2001:983) states that organizations are three things, “concrete settings within which individual action takes place; sets of abstract rules in the form of propositional statements; and historical communities”.

Cyert and March (1963:123) were the first to consider organizational learning at the organization level and stated as such:

“to assume that organizations go through the same processes of learning as do individual human beings seem unnecessarily naïve, but organizations exhibit (as do other social institutions) adaptive behavior over time. Just as adaptations at the individual level depend upon phenomena of the human physiology, organizational adaptation uses individual members of the organization as instruments. However, we believe it is possible to deal with adaptation at the aggregate level of the organization, in the same sense and for the same reasons that it is possible to deal with the concept of organizational decision making” (in Pawlowsky 2001:66).

Levitt and March (1988) also further develop organizational learning focusing on routines created through “encoded inferences”; these routines, “open the way to conceptualizing collective bases of organizational knowledge that are the result of learning from direct experience; learning from interpretations such as stories, paradigms, frames of reference, and culture; and learning from the experience of others” (Pawlowsky 2001:67).

Levitt and March (1988) further advanced the concept of organizational learning by exploring learning as the “encoding of lessons in routines” (Schulz 2005:4). Routines for Levitt and March (1988:320) included “the forms, rules, procedures, conventions, strategies, and technology around which organizations are constructed and through which they operate”. Pawlowsky (2001:67) points out how Levitt and March (1988:320) also emphasized, explicitly that routines also included, “the structure of beliefs, frameworks, paradigms, codes, cultures, and knowledge that buttress, elaborate, and contradict the formal routines”. These routines revolutionized the way knowledge was conceptualized as a collective. As Pawlowsky (2001:67) acknowledges seeing organizational learning through routines changed our perceptions of how and from where knowledge originates, now we could explore learning from such places as “direct experience [both from your own as well as from others’ experiences], learning from interpretations such as stories, paradigms, frames of reference, and culture”.

The literature on learning in organizations refers to the contribution of Schön and Argyris (1985) that introduced the concepts of single- and double-loop learning for coping with continuous processes of transformation and change as highly influential. According to Argyris (1991:4) the problem with learning is that most people define learning too narrowly as “merely problem solving” and only focus on the external environment, however, it is also important to look inward. Single-loop learning “involves learning from the consequences of previous actions in order to develop successful patterns of behavior” (Hatch 2006:316). For example, if you are hungry you open the refrigerator and consider your options. Single-loop learning identifies problems but cannot move any further in identifying why the problem originated. In double-loop learning one moves past what single-loop learning can do and in addition to it, can make value judgments, “questioning its own underlying assumptions, values, and risk, fundamentally changing the terms of its own organizing” (Hatch 2006:316). To continue the example presented above, you know you will be hungry around certain times of the day, therefore planning your meals, considering your budget and tastes (past experiences) will help you prevent the signal of hunger. This may be an oversimplified example, but it makes it easy to comprehend the concepts of single and double-loop learning. According to Argyris

(1991) it is a misnomer to assume that “getting people to learn is largely a matter of motivation”, on the contrary, double-loop learning considers also “how people think”, in other words, such things as what “cognitive rules or reasoning they use to design and implement their actions”. Argyris (1991:5) points out the one of the main barriers for moving from single- to double-loop learning is the *defense mechanism* built up in the individual. When threatened individuals counter with defensive behavior, this could for example be expressed by placing blame on others for a project’s failure or the loss of a client. Individuals do this as a natural response to the prospect having their role in the organization’s success or failure critically examined causing them to feel different feelings of not measuring up. Argyris (1985) suggests a process of interventions to provide the opportunity for reflective pause. I find the concept of single- and double-loop learning supports other concepts that have been reviewed in this chapter; it is a great way to explain mental processes of learning and to create an awareness for more reflective thinking to not only solve problems but gain an overall picture as to why they develop in the first place. However, I disagree with the aspect of dyadic or collective interventions as expressed by Argyris as a way to reduce/ capture the defensive behaviors that prevents double-loop learning. Interventions should not be a work-group process as it may do more harm than good in large settings. Instead interventions should be left to more intimate settings where individuals can more easily let their guard down. Instead refocusing on consequences of group outcomes as Carlile (2002) posits would help to reorganize the aims of the individuals involved (reviewed below).

While not the only two knowledge theories in existence Nonaka and Takeuchi (1995) and Spender (1996) are scholars that have created two widely accepted knowledge-sharing typologies. Nonaka and Takeuchi (1995) focused on identifying the process or stages of how individuals share knowledge and by doing so highlighted four modes of knowledge conversion: 1) socialization, 2) externalization, 3) combination and 4) internalization (For a more extensive review of this typology please see Nonaka and Takeuchi 1995). The main critique is that tacit knowledge cannot be converted into explicit knowledge. Spender (1996) building on the work of Nonaka and Takeuchi “created a matrix where he juxtaposed explicit vs. tacit and individual vs. social knowledge, thus creating four types representative of “intangible assets and skills” (see also Riege 2005:21). The four types follow: 1) conscious knowledge, 2) automatic knowledge 3) objectified knowledge and 4) collective knowledge (for a more extensive review of this typology see Spender 1996). Spender’s aim was to create a knowledge-based theory for understanding organizational behavior.

Embracing a more pragmatic approach Carlile (2002) makes a connection between knowledge creation and the barriers for knowledge sharing across functional boundaries in the organization; the focus here is not so much in identifying *how* knowledge is shared but rather *what* it is in practice and how it is used for a more hands-on goal. Large organizations today enjoy the efficiencies of knowledge sharing that span organizational boundaries through cross-functional collaboration. Carlile (2002:445) identifies that knowledge “cannot be separated from an individual’s engagement in the “practicing” of their practice (Cook and Brown 1999). Moreover, Carlile (2002:445) identifies three characteristics of knowledge in practice: 1) knowledge is *localized*, not in the sense of geographical location, but meaning that knowledge “can be quite similar across practices if it is localized around a set of problems”; 2) knowledge is *embedded*, in practice, in routines, tasks, and 3) knowledge is *invested*, individuals that have a hand in creating knowledge are invested in its success and will tend to defend it. These three characteristics that help create knowledge also become

barriers for sharing it. Carlile suggests a reframing of transforming old knowledge into new knowledge by exploring the differences and dependencies that exist at a boundary. According to Carlile (2002:453) it is a matter of coming together and collaborating in order to *transform* knowledge (instead of exchanging or transferring information); a process whereby “individuals represent, learn, negotiate and alter the current knowledge and create new knowledge to resolve the consequences identified”. A point of clarity: transformation here is not to be likened to the same term found in Nonaka and Takeuchi, where it is defined as the process of taking tacit knowledge and making it explicit. Here Carlile simply means decodifying knowledge that could also be explicit just not known and transforming it to get past the barriers found in cross-functional collaboration.

Reviewing the literature on organizational learning we can look to Maier, Prange and Rosenstiel (2001:24) who outline five points one can take from learning and knowledge on an individual level that can have an impact on organizational learning:

1. Learning is not always intentional.
2. Individuals learn from models (as in role models; other people).
3. Previous knowledge is always important and sometimes hazardous (creating stereotypes).
4. Learning results from making casual inferences.
5. Learning is motivated behavior.

“A knowledge-intensive workplace thrives on the exchange of ideas and experiences in the interest of enhancing the collective pool of knowledge and of generating new ideas” (cited from Tsoukas’ commentary in Argyris 1991:15). “Organizational knowledge is the capability members of an organization have developed to draw distinctions in the process of carrying out their work, in particular concrete contexts, by enacting sets of generalizations whose application depends on historically evolved collective understandings” Tsoukas and Vladimirou (2001:976). “The ability to communicate, negotiate, collaborate and exchange tacit and explicit knowledge in transnational organizations can be defined as an individual and collective set of intercultural and cross-cultural competences” (Holden 2002; Maimone and Mormino 2010). “What gives organizational knowledge its dynamism is the dialectic between the general and the particular. Without the general no action is possible. And without the particular no action may be effective (McCarthy 1994:68)” (Tsoukas and Vladimirou (2001:989).

The above composition of references emphasizes that for organizational members to be successful at co-creating meaning and knowledge they need to be aware of the general and the unique understandings that exist through the organization and their interrelation. This is comparable to the three perspectives—integrative, differentiation and fragmentation—for understanding culture in organizations by Martin presented in the culture chapter. These general categories could be likened to the integrative perspective, where management and leaders create structure through vision, mission and aims and strategies, various action plans that give order organizing meaning and purpose for the organization. However, functional groups, project teams, multi-division units all have their own general categories as well and this can be compared to the differentiation perspective. It is the ambiguity that it identified by the fragmentation perspective that we need to consider as opposed to ignoring it.

11.5 Culture as part of the Individual

There is a true and lasting connection between culture and the individual (learning) and also between culture and how we interact. The following are a selection of citations that substantiate the significance of the individual's role in understanding culture.

According to Clausen (2006:51), "culture is seen as being embedded in relationships, rather than in pre-determined structures, and the co-creation of meaning is seen as an ever-evolving process".

"In any particular instance, an individual behaves in response to the state of his organism (his drives) at the moment, and to his perception of the total situation in which he finds himself. In so doing, he naturally tends to follow his established habits, including his culture, but either his impulses or the nature of the circumstances may lead him to deviate therefrom to a greater or lesser degree. Behavior, therefore, does not automatically follow culture, which is only one of its determinants" but an important one at that (Murdock 1940:366).

The culture-centered approach to learning proposed by Vygotsky, Rieber and Carton (1987) posits that culture "is a source of differences in cognition as cognitive processes are formed through socio-cultural activities" (Mason 2007:26). It is important to consider how cultural characteristics affect how individuals perceive and from the review on understanding the individual it is clear that sometimes, typically unconsciously, individuals judge others based on their cultural, historical and experiential schemata. For example, in Denmark and typical of Scandinavian countries there is a uniform tendency of egalitarianism, this is experienced at work for example, in how we interact with one another. The status of individuals is not a primary component of their identity, it is something that just is; individuals would rather be identified by how they interact, how they are as a whole, instead of their status or title in an organization. However, as an American I have lived in Denmark long enough to also have observed that under this cool, egalitarian exterior, lays unspoken norms and rules about social behavior that most Danes are not consciously aware of; it is behavior enacted through what Anderson (1995) called *autonomous knowledge*, learnt through internalization of socially accepted norms and through what Vygotsky called socialization. These percepts undoubtedly have casual ramifications for non-Danes or even for Danes that have worked internationally and return. While others such as Americans and Chinese are seeking some type of formality and wish to respect what they would perceive to be necessary and traditional organizational status and role sets, such as titles and positions, Danes, while professional, would rather remove such formalities and get right down to business. The things we value are different and thus how we see the world is ultimately colored by our values.

Argyris (2009) references the research of French, Israel and As (1960) where they study the perception of participation between Norwegian and American employees of a Norwegian firm. The study indicated that, "workers in Norway were brought up with different feelings about participation than those in the United States. The Norwegian workers did not believe that participation was as legitimate an activity as did the American workers. Consequently, the effects of participation in Norway were significantly different". Argyris makes a point to let the reader know that there are other studies that prove the opposite is true for the act of participation in Norway. Nevertheless, the point here is not to prove if participation is important for the whole of Norway or not, that would be nonsensical to assume based on one particular study. However, the point more so is to realize that

in this specific study the perception of participation was inappropriately accessed and gave way to misunderstandings; here it is clear that 1) culture plays a role in how individual perceive in this case the concept of participation and 2) it is also to take note that the authors make specific reference to how “workers in Norway were *brought up* with *different feelings...*” this points to Vygotsky’s connection between cultural and historical affiliation to the learning process and how emotions are connected to the percept making process.

DiMaggio (1997) was straightforward and clear in explaining culture’s purpose for use in organizations ‘enacted’ through interaction of individuals. DiMaggio (1997:264) wrote:

“I focus on how people use culture, rather than the production of culture, ideology, or culture embedded in the physical environment. The point is not to psychologize the study of culture, but to lay a foundation for a view of culture as working through the interaction of shared cognitive structures and supra-individual cultural phenomena (material culture, media messages, or conversation, for example) that activate those structures to varying degrees”.

DiMaggio reviews the shift in conceptualizing culture from, “...In effect, culture was portrayed as a latent variable influencing in common such manifestations as media images, responses to attitude questionnaires, and the values embodied in everyday practices”...to being understood as, “ fragmented across groups and inconsistent across its manifestations (Martin 1992)”. Moreover, DiMaggio (1997:274) again clearly stated that, “Culture inheres not in the information, nor in the schemata, nor in the symbolic universe, but in the interactions amongst them”. In other words, the categorizations individuals use to make precepts and judgments about their context “structure [their] use of information” and because there is a continuous flow of stimuli and therefore infinite categories, it is as DiMaggio suggests that individuals’ selections of the appropriate cues are “guided by cultural cues available in the environment”.

The following list summarizes three of the four relevant reasons that according to DiMaggio (1997:265-266) why psychology has become useful for understanding culture.

1. Psychologists have rejected behaviorism, accepted and demonstrated the existence of mental structures used to perceive, process, and retrieve information, and found ways to make inferences about such structures.
2. Just as sociological research has demonstrated culture’s complexity and fragmentation, psychological research has demonstrated the complexity of memory and provided glimpses of the partitioning of mental structures by domain.
3. Recent foci of psychological research (schemata, categories, mental models, and so on) are much richer in cultural content than the formal operations or intellectual capacities that once preoccupied cognitivists and developmentalists (Rogoff and Chavajay 1995).

The above three reasons in particular further substantiate the theoretical sensemaking process of this chapter; point one addresses the focus on perception while point two and three supports the decision to use Martin’s three Perspectives presented in the Culture Chapter while also confirms again the importance of perception and social cognition in making schemata for understanding given context; also stated in point three. Additionally, I agree with DiMaggio that while the individual level provides a reframing of psychological aspects for culture we cannot stay at the individual level; it is

necessary to expand outside of the individual, after all, the individual is enacted in interaction. The literature acknowledges the influence of culture on developing relationships, for example, "differences in national cultures, attitude toward cooperation, and willingness to trust "outsiders" influence the continuation or dissolution of partnerships" (Park and Ungson 1997 in Parkhe, Wasserman and Ralston 2006:563). Holden (2002:273) denotes the term, "*participative competence* known as the ability to interact on equal terms in multicultural environments in such a way that knowledge is shared and that the learning experience is professionally enhancing" (also seen in Maimone et al 2010). The proceeding PART II will move outside of the individual to explore interaction.

PART TWO- INTERACTION

As we learnt in the Network chapter individuals build relationships in order to make sense of their environment. Strong relationships are those that welcome trust and mutual interests and can most accurately communicate meaning to one another. PART II concisely explores *relationships* and *communication* as two key aspects of interaction. These topics are again selected based on the iterative process between data and theory. In order to keep focused on the aims of this study I will specifically limit my review to the following three concepts under relationships: *social capital, roles, conflict* and *trust* (*only in connection with conflict as trust has been thoroughly reviewed under the network chapter Part II*) and the concept of *language* under communication.

"Most interaction is between persons who occupy positions (statuses) in groups or organizations in society. Interaction is thus not between whole persons, but between aspects of persons having to do with their roles and memberships in particular groups or organizations: their identities" (Stets and Burke 2003: 8).

In PART I we reviewed identity and perception. The above thoughts are in line with how we understand others and thus as Stets and Burke state, we only interact with a part of that self; this is something to keep in mind when reading this PART II the further explores interaction.

"Change is the reweaving of actors' webs of beliefs and habits of action to accommodate new experiences obtained through interaction" (Tsoukas and Chia 2002:567). In the introduction we discussed the innate need for individuals to be relational. Relationships provide us the opportunity to share resources more freely, to learn from one another more openly, and to receive external affirmation/validation that strengthens one's own self-perception/identity.

As explored and explained in PART I above:

"The ideal cannot be discovered or understood at the level of the consciousness of a single person; the ideal is an aspect of culture. Behind the ideal, behind the world of culture, and determining it, stands the objectively practical activity (first and foremost work activity) of a social subject in its historical development" (Davydov and Kerr 1995:15 on Vygotsky).

In other words, individuals need to interact in order to make sense of environment and they make sense of their knowledge, their understanding, through interacting.

*"The perception of social networks begins as soon as an individual enters a new organizational **context**. People are motivated to generate an overall picture of a social group*

that they have joined, they seek to identify subgroups that might complicate or facilitate their putative plans and they look for others to whom they can attach themselves” (Kilduff and Krackhardt 2008:3).

The literature on identity also made valid points on the need for interaction to help us in building our identity. The literature on perception also identified the significance in how our percepts and attributions create interpretations of others’ identity for us while perhaps justifying our own self-perception again. Miller and Steinberg’s three cues: cultural, sociological and psychological coupled together with the reflections that I made regarding the three aspects: experience, needs and emotion are also significant in understanding interaction and sets a base for understanding the individual in interaction.

Exploring the concept of interactions by way of metaphor we can explore the notion of intertwining, the act of weaving materials together to create another such as braids, baskets, rugs, and clothing. Johnston et al (2006:952) explain that “intertwining augments the performance of individual elements, and forms a reciprocal involvement between network participants”. “Intertwining figuratively means “mutually involved”; thus, elements are engaged but there is also a “reciprocal involvement” illustrating interdependency for achievement of something greater through synergetic effects (Robey et al 2003:118). While Robey et al (2003:118) focus the concept of intertwining between material and virtual elements of work life (such as emails and face-to-face meetings) they provide four aspects innate to the notion of intertwining relevant also in exploring interactions and the of building network relationships themselves: 1) reinforcement, 2) complementarity, 3) synergy and 4) reciprocity, further explained in the table below.

Table 24- Four Aspects of Intertwining & Examples in Network Context

Aspect	Definition	Relevant study example
Reinforcement	The addition of an element amplifies the effect of another element thus strengthening the relationship	Actor and/or their specific attributes and associations strengthen contributions to a project or lobbying efforts to get approval for a project
Complementarity	Each element offers unique characteristics that may compensate for weakness	Years of expertise offered by some actors vs. local market experience and knowledge by newer actors
Synergy	The combination of elements creates new knowledge or result that could not have been achieved otherwise	Partnering up with various R&D units to acquire specific know-how to launch global product
Reciprocity	Mutual interdependence (I would also add mutual orientation e.g. shared goals and vision to strengthen the interdependence)	Project success is dependent on the efforts of all team members

Source: Inspired and adapted from Robey et al 2003)

For Robey et al (2003) reinforcement also entails the existence of redundancy/repetition has a positive effect on work performance as it reinforces the message. This goes against the structuralist approach of network analysis where ego networks that are heavy with strong ties that are connected are redundant and are seen as a negative source for new information. Robey et al (2003) are aware that in order to reinforce relationships it “requires [a more] conscious coordination... or more careful intertwining”.

Reflections between interaction and knowledge

"As Berends et al (2003:1040) acknowledges, the interactions of knowledgeable actors become the seeds of change and serve as the means whereby systems reproduce. However, ascribing knowledgeability to actors does not imply an awareness of their motives, conditions and the consequences of their actions. Unacknowledged 'preconditions' and 'unintended consequences of action', when present, form the boundaries of knowledgeability (Giddens, 1984:294) and play an important role in the production and reproduction of structure" (Johnston et al 2006:949). This is as was discussed in [PART I](#) of this chapter, in the last section where Carlile (2002) explains localized, embedded and invested knowledge; in other words, if individual's knowledge is invested in practice it becomes a case of examining the strategies individuals will use. There needs to be a refocusing on interaction and the opportunity of relationships, especially in R&D knowledge networks where long-term collaboration is of great impetus for creating sustainable innovation. The following section explores relationships further.

11.6 Relationships

The topic of relationships was reviewed in the context of networks in Chapter 10. This review is based on the understandings uncovered in Chapter 10; nonetheless, the focus is geared towards the individual and their interactions. In Chapter 10 I defined relationships, "in terms of the promise tomorrow holds, the existing exchanges and previous patterns of interaction". The focus on relationships is the need present and future exchanges or interactions that constitute the relationship are positive and have a purpose that those participating in the relationship can find common ground with. This section will briefly review some excerpts from the network literature that focus more on the individual. Following these discussions I will explore social capital, roles and the dynamic of trust and conflict in relationships before moving on to discuss communication and language.

The literature on networks explored the social aspects of networks. This chapter focuses on the individual and their interactions. The following table presents some of the excerpts I have found in the network literature that are particularly relevant for understanding individuals. These explore the connection between the individual in interaction and the relevance of identity creation, perception, and the significance of relationships in networks for collaboration. The next section will further explore the concept of social capital from the perspective of individuals in interaction.

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

Figure 54- Overview of Individuals in Network Literature (focus on the individual in interaction)

Excerpts on Individuals in Interaction	Reflection and discussion
"Human action is always evaluative, sometimes consciously and at other times unconsciously" (Stacey 2007:299).	Perception, sensemaking and the three aspects of understanding individuals: experience, needs and emotions.
As I have identified in <u>PART I</u> of this chapter, "Interacting individuals are [continuously] forming the patterns of their interaction, the social, while at the same time they are being formed as individuals by their patterns of interaction" (Stacey 2007:294).	Identity creation and specification is the figurative ebb and flow between the individual as the self and the individual in interaction as part of society.
Complexity comes from human involvement in interactions as <i>individuals are able to reflect and have intent</i> . As discussed in the Network chapter relationships are initially defined by the "purpose of exchange as well as the amicable feelings of trust and reciprocity that develop over positive exchanges/interactions". Social interaction is indispensable in [complex social process of sharing knowledge as they] can create trust and foster cooperation" (Tsai 2002:187).	Relationships are defined by people; it is founded on the unique human capacity to be able to reflect and have intent and these are manifested in the above to points. In order to work together human beings need to be able to communicate and develop ideas together. Part of this is sharing a common purpose and the other part is how we 'feel' about one another. Positive interactions foster a relaxed environment where trust, reciprocity and cooperation can grow.
"Social relationships are driven by the basic need to communicate, to learn, to integrate with the society or the economy, to express oneself" (Todeva 2006:99).	This excerpt reaffirms are need to specify and co-create an identity with society. Relationships are part of this process of defining the self.
"As soon as we enter into relationships we constrain and are constrained by others and, of course, we also enable and are enabled by others" (Stacey 2007:299).	Acknowledging that are judgments, choices, decisions, are not purely made irrespective of the world around us is fundamental in creating an awareness for the co-creative process that individuals partake in.
According to Larson (1992:84) the historical attribute of relations "shape the context for the new exchanges...by reducing the risk". Moreover, the increase of credibility and the development of a reputation that extends outside of this relationship also aids in reducing risk and developing commitment which is required for the continuation and deepening of relations.	Whether it is through familial bonds or through other bonds the relationships we maintain and further develop have a history, a past that shapes how we communicate and understand one another. Larson points out that this history that people share together reduces the risk of ending relationships, of having miscommunication, etc. Risk reduction and the intertwining of individuals in a long-term or through intense relationships builds on developing commitment for one another.
Additionally, "Individuals pursuing their plans are always in relationship with each other in a group or power [configuration]. While individuals can plan their own actions, they cannot plan the actions of others and so cannot plan the interplay of plans and actions. The fact that each person depends on others means that none can simply realize their plans" (Stacey 2007:296). This brings to mind another concept that was introduced in the Network chapter in relation to relationships was that of <i>bonds</i> that tie/link individuals together; this was linked to mutual orientation in the relationships and the process of adaptation at the individual level.	We have already acknowledged that individuals are dependent on one another, here the point I make is regarding how bonds brings individuals together. What is implied above is stated here that mutual orientation is necessary for interactions to further develop into relationships. Additionally, that adaptation is needed on an individual level to participate in the ebb and flow of exchanges and different aims.
"In their communicative interacting and power relating, humans are always making choices between one action and another. The choices may be made on the basis of conscious desires and intentions, or unconscious desires and choices" (Stacey 2007:299). The knowledge about how to build and understand relational dynamics is reminiscent of the concept of social capital reviewed in the section below.	Now we know that individuals use identity, perception and interaction to function in the world around them, make sense and understand it. The point here is that the knowledge of how to best navigate social relationships is comparable to the concept of social capital.

11.6.1 Social Capital

As introduced under the structural approach of the networks Chapter 10, the concept of social capital originates from the work of social workers and sociologists when studying communities they realized that “strong, cross-cutting personal relationships...provided the basis for trust, cooperation, and the collective action in such communities” (Jacobs 1965 in Nahapiet and Ghoshal 1998:243). Social capital is defined as a groups “resources that are rooted in relationships” (Nahapiet and Ghoshal 1998:243). Social capital is *embedded* in mutual acquaintance and recognition of others in your network, group (p.243). Reciprocity or what Nahapiet and Ghoshal (1998:243) call “durable obligations” are *intertwined* in our actions: our social status or reputation and the role-sets we have in these settings; through, feelings of gratitude, respect, friendship or what I call *institutional trust*, which means that because you have membership in a group, there are certain rights, duties, privileges and feelings that are a given in that context. Nahapiet and Ghoshal (1998:243) suggest that we explore social capital from three distinct dimensions: *the structural, the relational and the cognitive*, however they also acknowledge that these dimensions are primarily for organizing our understanding of the concept of social capital as in reality they are highly interrelated. Out of the three dimensions I will focus the following discussion on the relational and cognitive, most relevant in relationships and interaction.

The relational dimension is driven by individual’s *relational embeddedness* and focuses on the relations individuals have that influence their behavior. These can be compared to the discussion about relational bonds from the Network Chapter PART II where I explore networks as relationships. Håkansson and Johanson (1992) identify four bonds that bring individuals together: 1) functional interdependence, 2) power structure (whether it is implicit or explicit; this is culturally dependent), 3) knowledge structure and 4) intertemporal dependence. Nahapiet and Ghoshal (1998:244) consider other types of bonds and they name some key facets such as, “trust and trustworthiness, norms and sanctions, obligations and expectations and identity and identification.

The cognitive dimension refers to, “the resources providing shared representations, interpretations and systems of meaning” (Nahapiet and Ghoshal 1998:244). Here it is important to explore shared language, codes and shared narratives and this last point resembles Weick’s point about having stories to share to help in sensemaking with others. Boland and Tenkasi (1995:353) also note that “it is through action within communities of knowing that we make and remake both our language and our knowledge”. Tsai and Ghoshal (1998:258) add that, “such communities must have space for conversation, action, interaction in order for the codes and language to develop that facilitate the creation of new intellectual capital”, through the social interaction.

According to Nahapiet and Ghoshal (1998:244) there are two key characteristics of social capital: 1) all forms constitute some aspect of the social structure and 2) they facilitate the action of individuals within the structure.

The following are argumentations that support these two characteristics.

- Social capital is owned jointly by the parties in a relationship, and no one individual has or is capable of having, exclusive ownership rights (Burt 1992 in Nahapiet and Ghoshal 1998:244). Therefore, social capital “cannot be traded easily” if at all.

-
- Social capital makes possible the achievement of ends that would be impossible without it or that could be achieved only at extra cost.

Moreover, Nahapiet and Ghoshal (1988:245) acknowledge two prominent themes when examining the consequences of social capital for action: 1) social capital increases the efficiency of action and 2) social capital is an aid to adaptive efficiency and to the creativity and learning that it implies. "Some have also suggested that social capital in the form of high levels of trust diminishes the probability of opportunism and reduces the need for costly monitoring processes" Putnam 1993 in Nahapiet and Ghoshal). The second theme points to how social capital "encourages cooperative behavior, thereby facilitating the development of new forms of association and innovative organization (Fukuyama 1995, Jacobs, 1965 and Putnam 1993).

There are disadvantages to social capital and as Nahapiet and Ghoshal (1998:245) discuss it is the very same influence that has a positive effect on interactions that can become controlling and stifling in its usage. However, there are many factors that, within organizations can impede this negative turn to the influence of social capital. Let us continue to explore the advantages a bit more. For example, Nahapiet and Ghoshal (1998:250) point out that there is more and more research, "demonstrating that where parties *trust* each other, they are more willing to engage in cooperative activity through which further trust may be generated (Fukuyama, 1995, Putnam 1993 and Tyler and Kramer 1996)".

It can be assumed that social capital can facilitate the creation of trust through relationship development and bonding in relationships. Nahapiet and Ghoshal recognized that there was a significant inter-relationship between the cognitive dimension in social capital and how individuals are able to combine knowledge for the creation of intellectual capital. I would further this point by adding that the interrelationship that is more exciting and significant is *how* individuals are able to combine knowledge and navigate the social exchanges and interactions; so it is a combination of the relational and cognitive dimensions where the new territory lays for exploration of interaction. Add this is even more interesting as it is comparable to the work of Vygotsky that pointed out that the understanding of the self is not just the self but of the self as social. Vygotsky (1987: 144-145) stated:

"For us, to talk about a process as "external" means to talk about it as "social." Every higher psychological function was external because it was social before it became an internal, individual psychological function; it was formerly a social relationship between two people".

We can further compare it to the work of Weick (1995) who defines sensemaking as a "combination of action and cognition together" and this is relatable concept to that of cognition and relational dimensions that create social capital.

"The behavior and choices of business actors within a relationship is triggered also by specific economic incentives or motives and social preferences that are framed within the context of all established and potential relationships. Individual needs and incentives generate relational preferences and as such they become an intrinsic element and an attribute of the relationships" (Todeva 2006:99). Thus outputs of relationships can be seen at three levels (as pointed out by Todeva 2006:93): 1) at the level of meaning network participants "develop a common understanding, share knowledge, and learn to interpret each other's behavior", 2) at the relationship level participants "develop norms and shared practices [for] how to participate in joint activities,

including transactions and communicative acts” and 3) at the community level participants develop wider synergies “including trust, security and general attitudes to cooperation”. This can be true, however, this paints a very integrationist picture of the network relationships and it is important to point out the individuals can be part of several networks at the same time, and have several corresponding role-sets. While they may experience these levels in different networks independent of the other, it is when interests in independent networks conflict with one another that they prove to be a concern. Thus, it is important to consider among other things, the role(s) of the individual in interaction.

11.6.2 Roles

The roles of the individuals in the networks are also an important aspect for understanding individuals and their interactions. From a cross-interdisciplinary perspective I explore Coser (1991) who looks at the interactions of nurses and explores the concept of role-set. “Role-set refers to all of the different roles that are associated with any single status” (Merton 1968, Blau, 1991 in Cott 1998:850). Coser delineates between simple and complex role-sets where simple role-set is “one in which most role partners do not differ much among themselves in status” and complex role-set is “one in which at least several role partners are differently located in the social structure and subject to change” (Coser 1991:21).

The reason why roles are significant when reviewing relationships is their involvement in interaction. Roles are constructed percepts that help individuals make sense of their identity and status as well as those around them in a given social setting.

“People develop a notion of who and what they are in interaction with others, a process in which confirmation is sought and modification is achieved step by step. This process is smoothest where [individuals] know one another well enough to take one another for granted. At the other extreme, where [individuals] are complete strangers to one another, the encounter is awkward because there is no common ground for definition of self and others [so it is clear individuals begin to use any type of schemata that could seem applicable in order to make sense of the given context] (Coser 1991:1)”.

Frequent interactions encourage the development of what “Weber called a shared definition of the relationship” or common ground, that allows individuals in the process of identifying themselves in context as well as in the social context at large (Coser 1991:1). The defining of role-sets is not just an issue for individuals but is also a group/collective concern as, “collective identities are chronically contested, as groups vie to produce social representations capable of evoking schemata favorable to their idea or material interests” (DiMaggio 1997:275). This can be compared to the lobbying experienced in large networks.

Coser (1991:3) wrote that, “Interactions and the norms that govern them are both fostered and controlled by shared knowledge and mutual conveyance of the individuals’ specific positions in the social structure”. Moreover, this knowledge of these positions provides road maps to other members of the social structure; however, these are all constructed. Social positions are just another type of cue that can be used to formulate our precepts about the world around us. Using positions to identify others is primarily used when no other cue is available. Coser (1991) uses role-sets to link an individual’s position in the structure to power, *influence* and alienation (and I would add that

there exists a relationship between an individual's role-sets and different forms of social governance not just those three identified by Coser, for example two opposing forms, such as trust and conflict). According to Coser (1991:35) the distinction between simple and complex role emphasized the quantity and complexity of roles in a set, thus simple role sets are those that "exists in a narrow hierarchy [and] offers only a limited number of choices of behavior". By definition complex role-sets are those that are complex, many, "located in different social structures", and "subject to change" (p.22). Moreover, complex role sets "allow the individual mental access to a variety of perspectives with a variety of role partners" (Coser L. A. 1995:20).

11.6.3 Trust & Conflict

In the network Chapter I discussed two forms of social governance in networks—trust and power, that influence how individuals navigate social structure. In discussing role-sets above Coser (1991) links an individual's position in the structure to power, influence and alienation. I will not reintroduce trust; only discuss it as part of the interrelationship between trust and conflict. Conflict does not have to necessarily be a bad thing as good outcomes can precede conflict, e.g., new knowledge, co-created meaning; however, for the most part the traditional view of conflict depicts a negative situation. The literature shows that, "interpersonal conflict has been modeled by several researchers (cf. Pondy, 1967; Thomas, 1992; Walton, 1987), each offering a variation of the same basic model. Conflict usually begins in a latent form due to incognizance, regression, displacement, or misattribution of the issues, parties, or events of an experience. Triggered by frustration and awareness, one or both parties conceptualize their experiences as issues and engage one another in discussion and argumentation. This, in turn, has both perceptual and behavioral consequences and the aftermath often leads to another confrontation between parties" (as cited in Volkema et al 1996:1439). This type of interpersonal conflict within organizations usually needs intervention as the application of third-party sensemaking, for example, for quick conflict resolution (a point that will be further discussed in PART III under sensemaking).

On the other hand there are positives that can result from the experience of conflict such as being exposed to different perspectives, thoughts and ways of acting causing for internalization processes of reflection. John Stuart Mill (1859:21) perhaps the most often cited proponent of communication across lines of difference, "pointed out how a lack of contact with oppositional viewpoints diminishes the prospects for a public sphere: "If the opinion is right, they are deprived of the opportunity of exchanging error for truth; if wrong, they lose what is almost as great a benefit, the clearer perception and livelier impression of truth produced by its collision with error." Likewise, Habermas (1989) assumes that exposure to dissimilar views will benefit the inhabitants of a public sphere by encouraging greater interpersonal deliberation and intrapersonal reflection" (Mutz 2002:111). Mutz (2002:114) identify four cognitive elements that can provide "an appreciation of the need to tolerate differences of opinion among disparate groups...": 1) being able to cross-over to different areas (for example, functional or project areas where one can share and learn from others), 2) exposure to others with dissimilar views, 3) awareness for the argumentation of the opposing others and 4) tolerance that can facilitate greater understanding amongst individuals as well as promote greater awareness of other views, together creating a more versatile individual. Conflict plays an important role in interactions and according to Mutz (2002:114) conflict can have such beneficial effects as "(1) encouraging a deeper understanding of one's own viewpoint, (2) by

producing greater awareness of rationales for opposing views, and (3) by contributing to greater tolerance”.

11.7 Communication & Language

To interact we must communicate. Individuals create meaning through sharing of information, their experiences, their motivations and needs and their emotional state. So the act of communicating has a symbiotic relationship with interacting. One cannot interact without communicating and one cannot communicate without interacting, in essence communicating is something we do with others, by definition communicating entails interacting to achieve the purpose of sharing something. Now, this is not to be interpreted as meaning that all communication is pleasant, positive or purposeful.

In the Culture Chapter the topics of communication and language were also explored as an ‘influencer’ of culture in business. There, communication was defined as, “the way in which we express ourselves to others; our history, our wants, our needs, our emotions” and language was defined as, “the most common vehicle to communicate those things we desire”. The section concluded with the proposition that communication and language have a significant influence on how individuals co-create meaning and develop culture.

From this chapter’s review we can add that, “If we do not have an open dialogue, we will not learn” as there exist significant correlation between communication and learning (Argyris 1991:6). Moreover Holden (2002) states that, “communication is seen as a relationship-supporting activity, a bonding process involving task exchanging processes, knowledge sharing, networking and collaborative learning”. “What is important in communication is that people generate a shared meaning, that they ‘negotiate’ meaning, generate a web of shared meanings. This shared meaning is shaped by, but also shapes networking, collaborative learning and knowledge-sharing” (Holden and Claes 2001 in Claes 2009:69). “One of the most fundamental adaptive changes in [interpersonal] communication occurs in the cognitive structure through which strangers process information from the environment” (Gudykunst 2003:361). From the review of the literature thus far it can be stated that cultural manifestations affect interactions as well as how individuals are perceived, how they perceive and what they perceive. It is useful to deconstruct what we understand by communication since it can seem like an unanswerable question whether communication affects interaction or interaction affects communication. The table below presents Gudykunst’s (2003) eight assumptions about communication that help in understanding communication in interaction. I will briefly review each below.

Table 25- Gudykunst's Eight Assumptions about Communication

Assumption 1: Communication is a symbolic activity
Assumption 2: Communication is a process involving the transmitting and interpreting of messages
Assumption 3: Communication Involves the creation of meaning
Assumption 4: Communication takes place at varying levels of awareness
Assumption 5: Communicators makes predictions about the outcomes of their communication behavior
Assumption 6: Intention is not a necessary condition for communication
Assumption 7: Every communication message has a content dimension and a relationship dimension
Assumption 8: Communicators impose structure on their interactions

Source: Gudykunst (2003:5-12)

Communication is a symbolic activity. According to Gudykunst (2003:5) symbols are things used to stand for, or represent, something else. Symbols are not limited to words; they also include nonverbal displays and other objects". Gudykunst (2003:5) adds that "symbols have referents", this means that they refer to other things and this gives individuals clues as to the context and how to behave. For example, a car seat in the back of parked car implies the car owner either has or takes care of a small child. The most important point Gudykunst (2003:5) makes is to remember that, "symbols are symbols only because a group of people agree to consider them as such...they are learned through a process of socialization, the process of learning to be a member of [a] culture". For example, watermelon is a sign of summer, snow is a sign of winter, leaves turning from green to yellow and orange hues is a sign of autumn and blossoming trees and flowers are signs of spring, however, in some places in the world it snows all the time, while in others it never snows at all. Symbols are contextual and agreed upon; while "two people will never have the same [underlying] meaning about a symbol", groups of people can find "sufficient agreement" that will help individual communicate with sufficient clarity.

Communication is a process involving the transmitting and interpreting of messages (Gudykunst 2003:6). Transmitting messages is "the process of putting our thoughts, feelings, emotions or attitudes into a form recognizable by others". Interpreting messages is thus "the process of perceiving and making sense of incoming messages and stimuli from the environment". Meanings are not transmittable, only messages and from the above explanation we now understand that no two people will ever have the same meaning about a symbol, we can also infer that since no two people have exactly the same background, then no two people "transmit or interpret messages in the same way". The other important aspect of this assumption is that transmission and interpretation of messages are not static activities and they also happen simultaneously, this suggests that communication is a process.

Communication involves the creation of meaning (Gudykunst 2003:7). We cannot transmit meanings because of *ambiguity* inherent in the language we speak. We also cannot transmit meaning because the meaning we attach to messages are transactions in themselves. For example, the channel/medium for transmitting the message, the situation, the individuals who transmit and interpret the message and the specific interaction (context) all affect how the message is perceived and interpreted. This brings the concept of perception full circle.

Communication takes place at varying levels of awareness (Gudykunst 2003:9). As we are socialized into our culture(s), we learn much of our behavior unconsciously. A large amount of our social interaction occurs at very low levels of awareness. We behave with low levels of awareness in situations we consider normal or routine (we take them for granted since they have been accepted as 'normal'). In routine communications, our communications are based on our implicit personal theories of communication that are unconscious, taken-for-granted assumptions about communication. These theories are the propositions we make based on the schemata and scripts we build from the cues that we infer from our context. Our implicit theories of communication are the lessons we learned as we were growing up through socialization processes; so whatever context, culture, city, environment, type of schooling, life style you were experiencing as a child has helped influence how you theorize about communication.

Communicators make predictions about the outcomes of their communication behavior (Gudykunst 2003:10). "When people communicate, they make predictions about the effects, or outcomes, of their communication behavior" (Miller and Steinberg 1975). Depending on the receiver(s) the sender will make propositions and decide how best to deliver the message. As Bruner's perception model suggests, the categories we use to identify individuals, will provide implicit suggestions about their behavior. The frequency of interactions and the depth of relationship intimacy and trust will increase the ability to predict behavior.

Intention is not a necessary condition for communication (Gudykunst 2003:10-11). Intentions are instructions we give ourselves about how to communicate. Intentions may be stated or unstated, or conscious or unconscious. Intentions are cognitive constructs (part of our thought processes). Intentions may go unresolved as a process of our communication, for example, if your intent is to be pleasant in your mannerisms at work, but the tone that you use in transmitting your message may be too harsh in a work context thus the tone it was delivered in was perceived as unpleasant. You need to correct your behavior to parallel your intent.

Every communication message has a content dimension and a relationship dimension (Gudykunst 2003:11-12). What is said and how it is said. This corresponds to the comment about tone usage in transmitting messages discussed above. **The way in which we communicate offers a definition of the relationship between us whether actual or perceived.** This is comparable to culture and the culture-based judgments (as explained under perception in this chapter) that individuals primarily use to understand their social world.

Communicators impose structure on their interactions (Gudykunst 2003:12). Relationships are contingent upon the groupings, structure or patterns we impose on the communication process. There can be casual relationships between events and/or also indicate a beginning and an end. This is a natural process of interaction that we have imposed structure to differentiate certain symbols, events, objects and actions so that we as perceivers can behave/act accordingly.

There are many reasons for which we communicate, and according to Gudykunst (2003: 12), "no matter the reason for communicating we always experience some degree of uncertainty and anxiety". "Uncertainty is a cognitive response and refers to our inability to predict or explain others' behavior, feelings, attitudes or values (Berger and Calabrese, 1975 in Gudykunst 2003:13). Anxiety is an emotional response and refers to "the feeling of being uneasy, tense, worried, or apprehensive

about what might happen” (Gudykunst 2003:13). Anxiety results from the fear of negative consequences, Gudykunst (2003:13), “identifies four types of negative consequences: psychological, behavioral, negative evaluations by members of the outgroup and the ingroup”.

“When we communicate, we present ourselves as we want others to see us and respond to how others present themselves to us. We modify how we see ourselves on the basis of the feedback we receive from others” (Gudykunst (2003:8). Of course, this modification is dependent on the individual’s self-concept and if their identity is strong then, it may resort to reconsider the contextual cues/feedback he continues to receive; perhaps he needs to find others like himself.

11.7.1.1 Language

“All human language contains elements that are universal and elements that are unique.” “Languages are all rule-governed” (Gudykunst 2003:211). There are rules for pronunciation, grammar, word usage, and interpretation. Language is able to unite individuals that share these rules and know what to expect when speaking with another using the same language cues. This is indeed the problem in international organizations using English that originates from different places (or English that is learnt as a second language). Individuals believe that they are using the same language cues but in effect the semantics and pragmatic rules can be broken which leads to continuous miscommunications. “Language, thus, is a complex object efficiently managed in a complex mental context, which in turn is embodied in the most complex known system, the brain” (Borge-Holthoefer and Arenas 2010:1265). Moreover, the use of language is not a singular process in our minds, as Borge-Holthoefer and Arenas (2010:1264-5) state, “linguistic production and comprehension processes occur proficiently in the mind while many other processes are concurrently interacting. Consider, among them, actions from the sensorimotor (vocalization), the perceptual system (listening, reading) or memory (retrieval, recall and recognition)”.

In 1920 Sapir introduced what at the time seemed quite an exotic thought—that language influenced or even determined the way in which people thought (Lustig and Koester 1993: 165). Sapir’s thoughts can be captured in this typical statement below:

“Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society. It is quite an illusion to imagine that one adjusts to reality essentially without the use of language and that language is merely an incidental means of solving specific problems of communication or reflection. The fact of the matter is that the “real word” is to a large extent unconsciously built up on the language habits of the group... We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation.”

“The Sapir-Whorf hypothesis posits that language is associated with how people perceive the world—it shapes how people think and experience the world”. For example, “although individuals can find a word in their native language that will correspond to each object they perceive in the physical world, their language directs attention to different aspects of the physical world and enables them to perceive (and communicate) relationships between and among these physical objects. The perceived relationships differ depending on the language (Whorf and Carroll 1956 in

Pauleen 2007:27). Sapir and Whorf's major contribution was that they gave new perspective of how to understand language and in doing so, "called attention to the integral relationship among thought, culture and language" and I would add action and interaction (Lustig and Koester 1993:167).

"The competence required to understand action may be compared to the ability to speak a language" (Argyris et al 1985:25). According to Von Wright (1971:114):

"Intentional behavior, one could say, resembles the use of language. It is a gesture whereby I mean something. Just as the use and the understanding of language presuppose a language community, the understanding of action presupposes a community of institutions and practices and technological equipment into which one has been introduced by learning and training" (in Argyris et al 1985:25).

Therefore, one could posit that language is relational:

"Language is not just a transparent medium for reflecting the way things are, and not merely a kind of conduit through which information and ideas are transmitted from a sender to a receiver, as many managerial conceptions of communication still assume. On the contrary, a specific use of language and certain discursive practices constitute social relations, social identities and the social world according to position and perspective (Fairclough and Wodak, 1997)" in S derberg and Vaara (2003:30).

It has been said that in order to truly understand others, you must understand their culture (how they identify themselves), not just speak their language. "Not language in the narrow sense of the word, but the language of the mind...something that goes even further than that is not the appeal to logic and reason, but some kind of emotional awareness of other people" (Jawaharlal Nehru, Visit to America in Adler et al 2008:69).

Lastly, I would like to show from the literature how language is also affected by culture. Gregory (1983: 363) talks about the importance of how culture affects language and how we understand symbols around us to determine how we interpret and perceive that leads to action. This point is further supported by Argyris et al (1985:26) when he indicates, "the knowledge required to understand action is embedded in the ordinary language and social practices of the community in which the action occurs". PART III follows taking an explorative look at social process techniques from the perspective of individuals in interaction.

PART THREE- SOCIAL PROCESS TECHNIQUES

After reviewing PART I and PART II of this chapter, individuals may be left a bit out of sorts as to how to gain further control over cognitive processes especially in a complex environment where individuals are confronted with unstructured situations with incomplete information. In addition to all the theories and concepts presented in PART I and II, PART III provides a review of four concepts of the theories available to assist individuals in understanding their environment and becoming more aware of their behavior.

Why is it necessary?

In exploring the individual and their interactions, I have realized there is one great commonality in the literature presented in this chapter—the reflective capacity innate in the human being. The ability to reflect and adapt to interact based on new knowledge is profoundly unique to the individual and it seems taken for granted (as in not applied to everyday life in practice). It is not to state that reflection will bring about crystal ball predictive solutions to all of our organizational quandaries. However, as many theorists from varying fields of study presented in the three reviews have suggested the ability of the human mind to reflect and to critically assess their situation, making more applied decisions is a gift lying dormant in all of us.

Why is it useful?

This study explores a complex environment, where individual autonomy and adaptability are high and necessary for innovation creation. And as the saying goes, with great power comes great responsibility. However, the individuals (employees) that are part of complex knowledge networks are rarely given the tools to participate in such a context. Here I will present four social process tools that can indeed facilitate how individuals in complex knowledge networks understand their environment and themselves in it. I am by no means stating these are the only tools available, however, based on my research of the extant literature; these are those that I have found to have the best “fit”. Additional tools and techniques exist and could be added to the repertoire for knowledge workers to assist them in getting their job tasks completed, however, the following four concepts presented in this final part of this chapter have been selected specifically due to the context of this study.

The four concepts reviewed here will be: Perceptual readiness, sensemaking, self-monitoring and social comparison theory. The first two concepts go hand in hand; while *perceptual readiness* identifies key steps for our perceptual processes, *sensemaking* explores a more expansive look at the process of meaning creation and co-creation. The last two concepts for social processes —*social monitoring* and *social comparison theory*—come from the research of Kilduff and Tsai (2009) on social networks and organizations. In an effort to bridge the gap between structuralists and individualist approaches to understanding networks Kilduff and Tsai (2009) explore cross-disciplinary concepts that can facilitate social processes; they emphasize the importance of the interrelationship between structure and individuals when they write, “to understand how structure changes over time, the analysis of individual actor attributes, motivations, cognitions and behaviors in actual social contexts such as organizations may be helpful”. I believe that in recognizing and becoming aware of new knowledge we are responsible to do something with it, therefore I present the following four concepts as social process techniques of the individual that is an active participant in complex networks; so that they are able to gain knowledge that gives them conscious control of how and what they are perceiving, the judgments they are making, ability to reflect and self-monitor and be able to learn while acknowledging they are part of a greater whole.

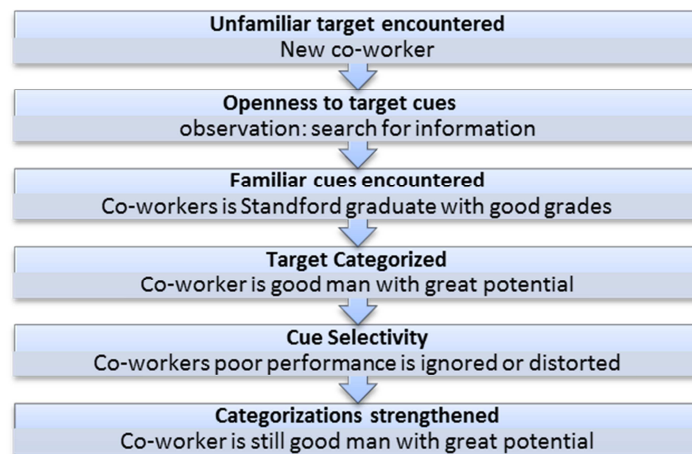
11.8 Perceptual Readiness

Perceptions have been discussed above in [PART I](#) of this chapter as an integral part of understanding the individual. Here I present Bruner’s (1957) concept of perceptual readiness. Perceptual readiness is a working concept based on the theory of perception presented earlier. In [PART I](#), Bruner’s propositions were reviewed as well as four general mechanisms of facilitating a readiness of the

senses in order to perceive more accurately. Here I will present Bruner's Model and expand on these four mechanisms.

As articulated in [PART I](#) Bruner's perception model has three parts to it: the perceiver, the target and the situation, that culminate in a perception. Bruner (1957) posits that when a "Perceiver encounters an unfamiliar target, the perceiver is very open to the informational cues contained in the target and the situation surrounding it. In this unfamiliar state, the perceiver really needs information upon which to base perceptions of the target and will actively seek out cues to resolve this ambiguity. Gradually, the perceiver encounters some familiar cues (not the role of the perceiver's role here) that enable her to make a crude categorization of the target". The search for information is reduced at this point. "The perceiver begins to search out cues that confirm the categorization of the target. As this categorization becomes stronger, the perceiver actively ignores or even distorts cues that violate initial perceptions" (Bruner 1957 in Johns 1996:92). It is important to emphasize that categories can be changed but it will take time or a 'jolt' of some sort to our standard operating procedures. The following table from Johns (1996:92) describes the process and provides an example.

Figure 55- Bruner's Perception Model



Source: adapted from Johns (1996:92)

It is important to note also that the figure is only meant as an illustration of the possible process one goes through, it is not meant to designate a mandatory process from one step to the next as perception is context dependent and also dependent on the individual and how they prioritize cues.

The four mechanisms for facilitating perceptual readiness are again: grouping and integration, access ordering, match-mismatch and gating; an explanation follows.

11.8.1.1 Grouping and integration

Bruner relinquishes the process of grouping to a purely anatomically-physiological process expanded on by the work of Hebb, while these considerations and connections are accurate I will not further

explore and review these here (see Bruner 1957:134). The point that is relevant here is that it would seem to be a natural human process to want to group our experiences over time. Much like many of the theories reviewed in this chapter, most scholars are in agreement that in order to make sense of the world around us individuals are quite selective about what contextual cues they take into their psyche. Bruner (1957) adds that human beings build up expectancies towards groups “facilitating our sensory process” and these are “learned” dependent upon their frequency. Integration is contingent upon keeping a record (mentally) on creating schemata from the grouping. Another aspect of human beings innate traits is that they wish to ‘treat random sequences of events as though they were governed by dependent probabilities—in essence the process of integration.

11.8.1.2 Access Ordering

Accessibility according to this mechanism denotes the “ease or speed” of coding cues. Bruner names two conditions that affect accessibility: “The subjective probability estimates of the likelihood of a given event, and certain kinds of search sets included by needs and by a variety of other factors” (Bruner 1957:135). The point Bruner is making here is comparable to the revelation I had in [PART I](#) where individuals are influenced by their experiences, motivational and emotional factors that affect our percepts and general understanding. For example, there is a general staff meeting at work, an employee that is engaged and perceives their contributions to be valuable with all other factors constant will look forward to the meeting while the opposite will be true for an employee that perceives their contributions to not meet up. In practical terms this can be referred to as priorities and value sets. Being aware of how an individual’s priorities and value sets affect how they perceive the world is essential in creating a greater awareness of perceptions and subsequent behavior.

11.8.1.3 Match-mismatch

According to Bruner match-mismatch is articulating the third, fourth and five steps in the figure above where cues are taken into the process of perception. This is a truly the simpler of the four mechanisms of perceptual readiness, it is more about being aware of our process of placing and organizing cues. As Bruner (1957:138) wrote, “it is for the regulation of such patterns of search or cue utilization that some mechanisms such as match-mismatch signaling is postulated”.

11.8.1.4 Gating

Bruner himself admitted that his discussions on these mechanics perhaps had an overemphasis on the neurophysiology; however, he believed it necessary to illustrate through these many examples the link between cognition and neurophysiology. I will keep it short and to the point. From a pragmatic perspective individuals unconsciously and most consciously make decisions about what they are being influenced by. We adapt to repetition. The point in this mechanism is through reflective exercises we become aware of how we use gating to achieve our end goals.

Overall, there are two main premises with perceptual readiness to keep in mind, the first is, “What is most likely to occur is not necessarily what will occur, and the perceiver whose readiness is well matched to the likelihood of his environment may be duped” and the second is, “the only assurance against the nodding of reason or probability, under the circumstances, is the maintenance of a flexibility of readiness: an ability to permit one’s hypothesis about what it is that is to be perceptually encountered to be easily infirmed by sensory input”. On a final note Bruner (1957:141) suggests two ways to overcome inappropriate perceptual readiness 1) one is a re-education of the

expectancies that individuals have about what is going to happen and 2) what he calls a “constant close look” would I would call reflective period much likened to the iterative process found in action research. Reflection is about taking time to ponder the outcome of decision processes and there outcomes and learning from these choices in order to make better, more informed choices in the future.

11.9 Sensemaking

The conceptual refocusing in organizational science from a focus on organizations towards a focus on organizing has according to Tsoukas and Chia (2002:573) been one of Weick’s (1979) “landmark contributions to organization science. According to Tsoukas and Chia (2002:573) Weick’s (1979:47) consists of reducing differences among actors and a process of generating recurring behavior through institutionalized cognitive representations”. The concept of sensemaking was introduced above in PART I of this chapter. While in PART I the review is meant to introduce and create an understanding here I explore sensemaking as a possible tool to help in social processes of interaction. Therefore I further explore what Weick (1995:17) called the seven distinguishing characteristics of sensemaking as they seem to expand upon the previous concept of perceptual readiness:

- I. Grounded in identity construction
 1. Sensemaking is grounded in identity. Under this point Weick (1995:23) makes five additional points in reaffirming this characteristic.
 2. Controlled, intentional sensemaking is triggered by a failure to confirm one’s self.
 3. Sensemaking occurs in the service of maintaining a consistent, positive self-conception.
 4. People learn about their identities by projecting them into an environmental and observing the consequences. According to Chatman et al (1986:211), “when we look at individual behavior in organizations, we are actually seeing two entities: the individual as himself and the individual as representative of his collectivity”; in light of this statement falls on reciprocal influence of interaction and the usage of the self as text for interpretation (Weick 1995:23). People simultaneously try to shape and react to the environments they face.
 5. The idea that sensemaking is self-referential suggests that self, rather than the environment, may be the text in need of interpretation.

- II. Retrospective

The emphasis here is on the lived” past tense aspect of experiences, that our indicative of how individuals can only know what they are doing after they have done it. Of course, people know that action they are taking in the moment, for example, when I drive a car, I know that the breaks are for stopping, the speedometer monitors my speed (so that I don’t break the speed limit). But here the emphasis on knowing is not of knowing how but knowing how you know how and being able to evaluate your knowledge and over all experience and if your knowing of knowing is an accurate perception given the context. So continuing to use the above example, if I drive in a congested city and I am used to driving in a small town, once I am done driving, I would retrospectively consider my performance as a big-city driver and whether there are indeed some things I can improve upon for

the next time. This step can be likened to reflexivity in the process of double-loop learning presented by Argyris in PART I above.

III. Enactive of sensible environments

Just as it has been uncovered by the above review in PART I and II that understanding is a combination of cognitive and interactive processes, so too does Weick (1995) define sensemaking as a “combination of action and cognition together”. The emphasis here for Weick is that individuals are not just making sense of their environment while they are acting and interacting but that the environment already creates assumptions that affect how individuals perceive it. Therefore, it is important to note a key distinction of sensemaking is “about the ways people generate what they interpret” (Weick 1995:13). Action is crucial for sensemaking. Weick’s choice of the word enactment is intentional and thought out due to the above point that there exists a causal resonance between the two—thoughts and action and action and thoughts.

IV. Social

“Those that forget that sensemaking is a social process miss a constant substrate that shapes interpretations and interpreting. Conduct is contingent on the conduct of others, whether those others are imagined or physically present” (Weick 1995:39). “When people overlook the social substrate, they manufacture theoretical obstacles that can be distracting” (Weick 1995:39). “Social influences on sensemaking do not arise solely from physical presence” (Weick 1995:40). “Sensemaking is never solitary because what a person does internally is contingent on others” (Weick 1995:40). Here it is important that we not mistake the social aspect of sensemaking as a search for constant shared meaning. While co-creation of meaning is significant for learning processes, for improvement of self-concepts and other’s concepts of identity it is not what is crucial for collective action; but rather “it is the experience of the collective action that is shared” (Czarniawska-Joerges 1992 in Weick 1995:42). Lastly, Weick cites Blumer (1969:76) “participants may fit their acts to one another in orderly joint actions on the basis of compromise, out of duress, because they may use one another in achieving their respective ends, because it is the sensible thing to do, or out of sheer necessity... In very large measure, society becomes the formation of workable relations”.

V. Ongoing

Sensemaking is an ongoing activity. “To understand sensemaking is to be sensitive to the ways in which people chop moments out of continuous flows and extract cues from those moments” (Weick 1995:43). Langer (1989:27) laments that the world is continuous and dynamic, yet we keep resorting to absolute categories that ignore large pieces of continuity, thereby entrapping us in misconceptions”. Thus, as Weick (1995:45) states, “the reality of flows becomes most apparent when that flow is interrupted. And interruption to a flow typically induces an emotional response, which then paves the way for emotion to influence an emotional response, which then paves the way for emotion to influence sensemaking. It is precisely because ongoing flows are subject to interruption that sensemaking is infused with feeling”. There are two types of emotions negative and positive. Weick (1995: 47) states that, “negative emotions are likely to occur when an organized behavioral sequence is interrupted unexpectedly” and it is interpreted as “harmful or detrimental”. On the other hand positive emotions occur in two different settings: 1) when “there is the sudden

and unexpected removal of an interrupting stimulus and 2) “events that suddenly and unexpectedly accelerate completion of a plan or behavioral sequence”. Emotions play a role in how and what we recall from memory and how we reflect on our current situation together with our recollections of past events. Research shows that the present emotional state tends to elicit similar types of emotions, e.g., anger will bring up memories when an individual experienced anger.

VI. Focused on and by extracted cues

To be able to focus on something you must be able to notice it first. Weick (1995:52) cites Starbuck and Milliken (1988:60) as towards their distinction of noticing. The process of noticing is how cues are extracted for sensemaking, it is defined as “the activities of filtering, classifying, and comparing”. “Noticing determines whether people even consider responding to environmental events” this can be likened to the discussion about priorities that direct our percepts discussed above. According to Weick (1995:51), “what an extracted cue will become depends on the context in two important ways: 1) context affects what is extracted as a cue in the first place and 2) context also affects how the extracted cue is then interpreted”.

VII. Driven by plausibility rather than accuracy

“Accuracy is nice but not necessary” (Weick 1995:56) Weick (1995:57) adds that the “strength of sensemaking as a perspective derives from the fact that it does not rely on accuracy and its model is not object to perception. Instead, sensemaking is about plausibility, pragmatics, coherence, reasonableness, creation, invention, and instrumentality”. The following list from Weick (1995:57-60) recaps the reason why in sensemaking accuracy is secondary.

1. People need to distort and filter, to separate signal from noise given their current projects, if they are not to be overwhelmed with data.
2. Sensemaking is about the embellishment and elaboration of a single point of reference or extracted cue. Embellishment occurs when a cue is linked with a more general idea.
3. Speed often reduces the necessity for accuracy in the sense that quick responses shape events before they have become crystallized into a single meaning.
4. Accuracy only becomes an issue for short periods of time and with respect to specific questions.
5. The fact that organizational life is perceived as interpersonal, interactive, interdependent; thus the criterion for accuracy makes more sense when investigators study object perception rather than interpersonal perception.
6. The ongoing effect of sensemaking is not accuracy fulfilling since to be accurate structure needs to be selected.
7. Stimuli that are filtered out are often those that detract from an energetic, confident, motivated response. Accurate perceptions have the power to immobilize. People who want to get into action tend to simplify rather than elaborate.
8. It is almost impossible to tell, at the time of perception, whether the perceptions will prove accurate or not. This is so because perceptions are partly predictions that may change reality, because different perceptions may lead to similar actions, and because similar perceptions may lead to different actions.

While reviewing all the reasons why accuracy is not necessary for a sensemaking process, Weick (1995:60-61) explicitly points out what is necessary for sensemaking:

1. Something that preserves plausibility and coherence
2. Something that is reasonable and memorable
3. Something that embodies past experiences and expectations
4. Something that resonates with other people
5. Something that can be constructed retrospectively
6. Something that captures both feeling and thought
7. Something that allows for embellishment to fit current oddities
8. Something that is fun to construct

Put quite plainly, “what is necessary in sensemaking is a good story” Weick (1995:61).

Under **PART II** in this chapter there was a discussion about relationships and roles from there I took up the opposing aspects of trust and conflict and under conflict there was made reference to third party sensemaking. Here I elaborate how sensemaking can also be a social procedural tool for helping resolve conflict in a pragmatic and helpful way. Sensemaking becomes a “process of social facilitation” when through the creation of “cognitive scripts” or dialoging and storytelling with others individuals share, vent, search for validation, clarification and comfort; this Volkema et al (1996:1442) call interactive sensemaking. “Conversations with a third party [i.e., an individual that is not part of the particular phenomenon or “conflict”] are a means of cognitive organizing” (Volkema et al 1996:1442) where through conveying of information and emotion (selection and enactment as seen by Weick) brings clarity. Thus, it can be said that, “sensemaking reduces ambiguity and builds confidence in and commitment to a perspective” regardless of whether the behavior that follows reduces or erases the conflict or whether it escalates it (1443). Volkema et al (1996:1445) proposed a framework for understanding the three main components of the process of interactive sensemaking as well as two primary orientations: 1) self-interest and 2) relational that guide individuals towards their actions. While I find the work of Volkema et al (1996) interesting I think that it should not be limited to conflict resolution as I strongly believe it can be expanded to aid in the collaborative processes of complex networks as well. The framework is based on interest and relational aspects runs parallel with aspects found both in differentiation-based culture manifestations as well as in the relational and cultural aspects of networks identified in the last chapter.

Table 26- Framework for understanding Third-Party Sensemaking

Elements	Primary orientation	
	Self-interests	Relationship
Emotional	VENTING	CONNECTING
Cognitive	INTELLECTUAL JUSTIFICATION	RELATIONAL AFFIRMATION
Behavioral	POSITIONING	PROBLEM-SOLVING

Source: Volkema et al (1996:1445)

11.10 Self-monitoring

“Self-monitoring research builds on Goffman’s (1959) insights concerning the advantages [i.e., social approval, trust and liking] that accrue to those who adapt attitudes and behaviors to the demands of social contexts” (Kilduff and Tsai 2009:81). Self-monitor can be likened to an individual’s ability to “scan” for symbols or “social clues” for expected behavior; this is comparable to the role-sets discussion in [PART II](#), where Coser (1991) uses role-sets to link an individual’s position in the structure to power, influence and alienation (and I would add that there exist a relationship between an individual’s role-sets and different forms of social governance not just those three identified by Coser, for example the two opposing forms of trust and conflict). According to Kilduff and Tsai (2009:81) the literature on self-monitoring makes a distinction between high and low self-monitors. “The basic idea is that compared with high self-monitors, ‘low self-monitors rely less on social cues to direct behavior and more on introspection’ (Caldwell and O’Reilly, 1982b:125 in Kilduff and Krackhardt 2008:123).

High self-monitors “receive their cues from the relationship with their environment; they are represented as “attuned to role expectations”, “relatively flexible”, can be “more successful at detecting people’s intentions” and “tend to emerge as group leaders”. On the other hand low self-monitors “are controlled from within by their affective states and attitudes”; they are represented by a need to “be themselves” despite the context and they are “consistent”, and enjoy routines. While the concept of self-monitoring for me resembles sensemaking and the results of high self-monitors resembles the possible results of boundary spanners (those individuals that are able to transcend the social structural boundaries and have memberships in varying social networks), the way that it has been conceptualized is relative to personality traits, e.g., extrovert vs. introvert (Kilduff and Tsai 2009:81).

High self-monitor:

- Are attuned to the roles of other people
- Use cues from others as guidelines for monitoring their verbal and nonverbal self-presentation (Kilduff and Krackhardt 2008:123)
- Highly responsive to social and interpersonal cues of situationally appropriate performance
- What does the situation want me to be and how can I be that person?
- Choices based on the basis of socially defined realities
- Are more likely to resolve conflicts through collaboration and compromise (Baron 1989 in K & K 2008:134)
- Tendency to emerge as leaders (Zaccaro et al 1991 in Kilduff and Krackhardt 2008:123)
- More active in conversation with focus on the other: good at pacing conversations and using humor: reciprocating self-disclosures

Low self-monitor:

- Insist on being themselves despite social expectations
- Rely less on social cues to direct behavior and more on introspection.
- Are controlled from within by their affective states and attitudes (Snyder 1979:89)

-
- Behaviors reflect their own enduring and momentary inner states (Snyder and Gangestad 1986:125)
 - Who am I and how can I be me in this situation? (Snyder 1979:124)
 - Choices based on intrinsic quality
 - Follow more internal cues to produce effective work (Kilduff and Krackhardt 2008:135)

“High and low self-monitors differ in the evaluative criteria they bring to the choice process” (Kilduff and Krackhardt 2008:124). High self-monitors are good at using interpersonal strategies such as what Snyder (1987:42) calls “lubricating” techniques (also in Kilduff and Krackhardt 2008:135). Employing high self-monitoring is beneficial in contexts where cooperation and collaboration are essential to achieve organizational goals. (see review by Baron and Markman 2000 in Kilduff and Krackhardt 2008:135). “The social skills and leadership abilities characteristic of high self-monitors may enable them to perform better than low self-monitors in such contexts” (Kilduff and Krackhardt 2008:135).

Instead of focusing on self-monitor as a predictor of performance I argue that we provide it as a tool for creating awareness in individuals thereby giving them the option of learning. As I suggest, I believe that individuals can and should vacillate between high and low self-monitoring. So instead of focusing on the connection between self-monitoring, structural position and performance, I think it innovative to explore the promotion of a blend of both high and low self-monitoring in network structures as a way to increase social intelligence but also to preserve creativity and individuality and through these the diversity that makes these networks of individuals such a competitive advantage for innovative organizations such as Grundfos. The aim is not that every individual be a high self-monitor all the time but that individuals possess an understanding of both techniques.

Gangestad and Snyder (2000:546) consider self-monitoring as a variable that stands out as it is focused on people’s “active construction of [their] public selves to achieve social ends”, in other words adapting their identity. Self-monitoring is also seen by Kilduff and Krackhardt 2008:134 as a “personality variable that could potentially affect performance” (refer to Gangestad and Snyder 2000 for a review of how self-monitoring has provided important insights to individual differences in how individuals present themselves in social contexts). The following three points highlight the main points:

- 1) Self-monitoring theory provides compelling arguments linking individual differences in self-monitoring with a range of job outcomes, such as performance in the workplace, leadership emergence in workgroups, conflict management, information management, impression management, and boundary spanning (Kilduff and Day 1994; Snyder 1987:88-90)
- 2) Self-monitoring theory makes clear predictions concerning the effects of self-monitoring orientation on how individuals shape the social world (Snyder 1987:59-84)
- 3) The cutting edge of personality research of interest to social networkers may lie in approaches that recognize individual differences in predictable patterns of variability across situations, as self-monitoring does (White 1992:206).

Moreover, I believe self-monitoring while it relies heavily on the individual both how they internalize and conceptualize (sensemake) and how they react to different situations, it also relies heavily upon

the context of the given situation. There could be an individual that in a given situation will be a high self-monitor while in another situation a low self-monitor; in my opinion this is based on the need to take up the situation or conflict. This is also akin to concepts of *detached or involved thinking* presented by Elias 1987 discussed in Stacey 2007:296-297. Detached thinking equates to rational thinking while involved thinking is emotionally fueled. Stacey posits and I agree that thinking involves a blend of both; “thinking rationally always also involves emotion at the same time”. Moreover, and similar to my argument above about high and low self-monitors, Stacey (2007:297) states that ways of thinking will differ from one situation to another; individuals’ thinking and self-monitoring processes are contextually- and needs-driven.

Similar to the concept of self-monitoring is that of social control. Larson (1992) identifies several forms of social control (what I refer to as social governance forms in this and the previous chapter) in network structures: personal relationships, reciprocity, unconventional mechanisms of coordination (such as trust, and mutual adjustment), reputation as an output that provides “stability and longevity” to relationships and trust and the concern of keeping a positive reputation to secure future involvement. For Larson social control “is crucial to the formation and maintenance” of network structures. Social control as conceptualized by Larson, a view I support, takes into consideration both internal and external control; in other words, internally, individuals self-regulate and externally, we process feedback based on our behavior to distinguish what is appropriate and acceptable in which groups.

11.11 Social Comparison Theory

People prefer to interact with others who are similar to themselves. Kilduff and Tsai (2009:49) consider this preceding statement as one of the important underlying principles found in social network research. According to social psychology the concept of social comparison states just that: “people’s tendencies, when faced with important evaluation of decision tasks, to compare themselves with similar others” (Kilduff and Tsai 2009:41). Kilduff and Tsai (2009:41) states, “This theory offers predictions concerning the network connections that people forge, and the effects of these connections on attitudes and behaviors”. “According to Festinger’s (1954) formulation of social comparison theory, (a) human beings learn about themselves by comparing themselves to others; (b) people choose similar others with whom to compare; and (c) social comparisons will have a strong effects on attitudes and opinions when no objective non-social basis of comparison is available and when the opinion is very important to the individual (see Goethals and Darley, 1987, for a review of social comparison research)” (Kilduff and Tsai 2009:49).

The idea of homophily can be construed as an essential part of most social interaction processes. Again Festinger 1954 (in Kilduff and Tsai 2009:52) points out that the, “basic idea is simple: people like to associate with others who are similar. Similar others are helpful in evaluating one’s ideas and abilities, especially when important consequences are at stake”. However, by nature human beings have a tendency for being curious, for wanting to discover the “new-something”. This is what Kilduff and Tsai (2009:54) consider the other side of wanting to be around similar individuals; this is what they call heterophily. Under this perspective, individuals that are not part of a group, team, but are brought in for some reason, i.e., their expertise, knowledge, experience, they can offer, provide a new source of information that was not previously available. The concept of the “stranger among us” adopted from Simmel’s (1950) work on heterophily, is also comparable to the concept of

boundary spanners in Communities of practice³⁷ (networks) as well as the pragmatic approach exemplified in Carlile's (2002) localized, embedded and invested knowledge in practice that vacillate between their usual "home" network and other "visiting" networks. In the case company, Grundfos, there are quite a number of examples that validate both social comparison theory and heterophily, for example, in the case of Danish expatriates working in China.

11.12 Chapter Summary

This study sees the individual as drivers of activity—through their interactions. It is essential to understand the individual if they are to carry such a role in understanding the larger context of this study, which is to explore how to improve collaboration processes of multi-national knowledge networks. I could have chosen to base my understanding of individuals on assumptions; however, driven by iteration, I found it necessary to explore the individual and their interactions. Let me be clear this study is not a study of psychology but one of how individuals in interaction drive phenomena.

In PART I we explored identity, perception and the connection between perception and social cognition, which to me is simply an extension of perception. From the review of the literature above we know can better understand the interrelationship between the individual and their context. There is a symbiosis between the individual—how they develop, learn and communicate with their social world—and how this social world impacts, influences the individual in return. PART I further explored learning and knowledge that provided us with insights for how individuals build up their percepts and understand the world based primarily on the original learning styles used through socialization at an early age. This new information provides us clues for how to better understand how others are listening and understanding us. This is further elaborated in PART II where I explored interaction and relationships through concepts such as social capital, role-sets and the interrelationship between trust and conflict. Originally introduced in the Network Chapter 10, interaction and relationships are discussed here with a focus on individuals instead of the structure. Through social capital I identified the connection between relational embeddedness (Nahapiet and Ghoshal 1998) and bonds presented in Chapter 10 by (Håkansson and Johanson 1992). Moreover, there are new insights when exploring role-sets and how these are similar to the multi-dimensional nature of identity. PART II also further elaborated on the discussion that started in Chapter 9 Culture: communication and language. From the perspective of individuals, I explored how communication and language influence interaction. Communication in its basic sense is the exchanging of symbols and information by way of language. These exchanges are influenced by the way individuals learn through socialization and these processes are further influenced by how we perceive ourselves and the social world we are part of. PART III focused on providing four social process techniques. Emphasis in presenting these tools was primarily due to the taken-for-granted nature of reflection in social business contexts. Each of the four tools possesses some type of reflective capacity. Also all four tools provide the opportunity to reconsider if we are enacting what Argyris called defensive behaviors that prohibit us from critical listening and learning from our social context.

³⁷ Communities of Practice (COP) is a term coined by Etienne Wenger to explain a tight cohesive group or network of people that are able to effectively use one another to accomplish their tasks and surpass these practical uses to create new ideas, knowledge based on the coming together.

Summing up the three parts of this chapter I would say that the overlapping message for intra-organizational multi-national knowledge networks that underpins individuals and their interactions presented in this chapter is a message of *autonomy, adaptability and reflection*. As I have written in the introduction of this study times have changed for business, specifically those dealing with internationalization of knowledge work such as that of R&D activities. However, it is not necessarily the case that management has focused on bringing employees up to speed with the changing times as it is new territory we are embarking upon. It is necessary that given the change in context that those participating in it, be assisted on how to best understand it. Not only is it a matter of understanding but also of reeducation, which can be difficult for knowledge workers as well as their managers. This is where adaptability and reflection become necessary and essential tools for surpassing the difficulties in the social context.

Part IV- IDENTIFYING NEW KNOWLEDGE AND CONCLUDING REMARKS

Part IV will combine the emergent and relevant data from Part II and the literature reviewed in Part III towards revisiting the conceptual framework and further developing new theoretical constructs for improving collaboration processes in multinational knowledge networks.

CHAPTER 12-

12 Introduction- Thematic & Theoretical Development

The aim of this chapter is to analyze and synthesize the information presented in Part I- *Setting the Scene*, the emergent themes presented in Part II- *Journey of Discovery* and the theories explored in Part III- *Literature Exploration and Reviews* to create a comprehensive analysis that will a) further develop the most significant and relevant themes and concepts presented throughout this dissertation so as to b) clarify how to improve the management of intra-organizational multi-national knowledge (R&D) networks and how employees can improve on their collaboration processes.

The chapter is divided into three parts. PART I will begin by revisiting the initial conceptual framework in Chapter 4, however, before delving into expanding upon the three most significant components of collaboration: culture, networks and individuals and their interactions in this study; there will also be a discussion on context and why it is relevant. PART II will present a second framework that builds upon the conceptual framework, identifying and emphasizing the inter-relationships between the three components and their relevance/importance for further improving collaboration processes. The chapter concludes with PART III that brings together thematic and theoretical developments presented in PART I and PART II through a critical discussion and concludes by presenting the organizational suggestions.

PART ONE- THREE MOST SIGNIFICANT COMPONENTS TOWARDS IMPROVING COLLABORATION

At the beginning of this study there were a number of aspects of the context that immediately emerged as possible significant components towards the improvement of collaboration among individuals in global knowledge networks. These are listed in the introduction of the study under section 1.1 *First Impressions*. Through the course of the study's first year the conceptual framework was developed pinpointing what the data highlighted as the three most significant components towards the improvement of collaboration processes (this was revealed through interviews, participating in various activities in Grundfos and through observations in other activities). In Chapter 4 I expanded upon these concepts, as well as exploring the concept of knowledge. I briefly reviewed theory to help begin to develop the concepts; however, I reverted back to the data and the environment to continue to explore these as well as other concepts that emerged from the data.

Coming full circle this chapter expands on the three components originally presented in the conceptual framework further expanding on them for developing new theoretical constructs that will facilitate better understanding of the context of intra-organizational multi-national knowledge networks and in particular improving the management of and collaboration in the Grundfos Global R&D Network. The figure below originally introduced in Chapter 4 *Conceptual Framework*, represents the three most significant components of collaboration processes, namely culture, networks and individuals and their interactions.

Figure 56- 3 Point Model for Understanding Network-Based Organizations



12.1 Three Main Components of Collaboration in Networks

12.1.1 Component # 1 Culture

Both the business literature and practice have focused on understanding culture through the concept of national culture traits and characteristics. The data in this study has revealed that while this information may be interesting or novel it is limited in its ability to help as it lacks the dynamism necessary to tackle cultural understanding in a relational setting. This study has revealed that culture is enacted *through* interaction *between* individuals. This being the case heightens the significance of context, i.e., structures, such as networks and content, i.e., individuals. Culture in practice thus becomes contingent on two concepts: interaction amongst individuals and roles and purpose within networks (these inter-relationships will be expanded upon in PART II of this analysis chapter).

12.1.2 Component # 2 Networks

The study and exploration of networks in business literature has focused primarily on reducing the individual and the relationships to nodes and lines, exploring snapshots of these linkages through very specific indicators such as strength or weakness of ties for accessing key individuals. This study has revealed the importance of the individual in networks through a focus on relationships and the uniqueness that comes from the inter-relationship between the individual in interaction, i.e., cognitive and relational processes. In the context of this study as well as in other comparable situations relationships can be seen as a means to achieving task completion, while complex, relationships in these types of networks should not be ignored but further explored.

12.1.3 Component # 3 Individuals and their Interactions

The third component individuals and their interactions has not seen much treatment in business literature. Other areas such as sociology and psychology explore the individual. In this study I have

explored the individual and their interactions in the context of complexity of all three of the components. The analysis reveals that to better understand individuals and their interactions, we need to explore identity, and perception in a continuous cycle that is dependent on three key aspects of individuals: 1) experience, 2) needs and 3) emotions.

PART I will thoroughly analyze each one of the components respectively, using both data excerpts and theoretical excerpts and explanations to emphasize how a focus on each one can improve global collaboration.

12.2 Understanding Culture for Improving Global Collaboration

Why is it relevant to acknowledge the predominant way we understand culture in organizations and how can this revelation improve collaboration?

I define culture in organizations as³⁸:

Culture in organizations is contextually-dependent dynamics between individuals' cognitive and relational structures and the resulting and evolving understandings gained based on mutually constructed and enacted perceptions that come about through interaction.

Culture has such a profound influence on how we understand one another, how we make assumptions, perceive situations and attribute characteristics, ultimately affecting the decisions we make and the actions we take. Culture becomes interwoven into the fabric of our context and we have a tendency of taking that for granted. It is necessary to understand culture in light of the context we are in as it provides a frame for how individuals should understand it and apply it. Understanding that culture in the context of intra-organizational knowledge networks is much more dynamic and dependent on the individuals and their interactions is essential for improving collaboration processes.

More often than not, in an organizational setting I find that an exploration of culture is comparable to treating pain instead of finding and treating the source of the pain. For example, when organizations desire to explore culture it is with an end means to fix culture, e.g., as in the traditional national culture perspective, largely used when two different national cultures are to work together, i.e., mergers and acquisitions. While this perspective on culture can be helpful and is perhaps also novel (individuals may acquire new knowledge of general information about what is accepted in other countries cultures), it does little, as the data points out, to assist employees in dynamic multi-cultural interactions, which are the cornerstone for developing relationships and through these, improving collaboration.

The aim here too is towards understanding so as to improve work processes not about static categorical national culture understandings. The following excerpt from a Chinese engineer presents that real-world issue with cultural training—it is informative for some general guidelines but not useful in a dynamic, practically applicable way.

³⁸ Please see Chapter 9 Culture Chapter literature review for a more detailed explanation.

*“I think, actually two years ago, we had a culture training. It is telling the Danish culture, which is quite different from ours. If I talk to the new employee, I would like to use a **lot of examples** to show them because if you say just in words like guidelines or something, it is not easy to understand and I think it's better if we use examples, even to specify some situations which are quite different. I think it helps; helps a lot.” (C014, Chinese engineer)*

R&D China received culture training to facilitate how to work across cultures, to help employees be better prepared to understand and communicate with their foreign colleagues. However, the result was quite revealing; cultural training is over simplified for the needs of R&D employees. The above excerpt reveals how static cultural training is especially for those working in a dynamic environment such as multi-national knowledge networks. The above excerpt also illustrates how this engineer identified how to facilitate understanding of the differences for new Chinese employees—through specific situational examples, in other words, focusing on inter-personal dynamics.

It is more than learning what local customs are acceptable. We have moved past traditional categorical cultural training. Let me be explicitly clear I am not denouncing the information presented by cultural dimensions or cultural training. This information provides guidance, a general map for understanding the basics of a country and its people. However, my point is to confront those that continue to ignore the experiences from the field. Business people who work in a multi-national context are interacting and building relationships, for these people, cultural dimensions fall short of explaining the complexity of inter and intra personal intricacies and relational dynamics.

On the contrary, I believe, based on the literature reviewed and the data collected particularly that the perspective of understanding culture by way of national culture dimensions (this type of cultural training) will work against interaction as it tends to create limitations for how individuals' perceive situations and can lead to stereotype-building.

Proposition 1:

Therefore, this study proposes that:

When culture tends to be understood (simplified) through national culture dimension models that only provide a static, generalized picture of a nation's cultural traits, then interactions and relationships among multi-national, multi-cultural network members can become strained and conflicted when individuals and situations stray from the preconceived expectations generalized from said National cultural dimensions.

As explained at the onset of the study, the case company Grundfos is in the process of internationalizing its R&D activities with the aim of creating a Global R&D Network. In this context, the concept of culture becomes fixated and understood solely as a National Culture issue since, as the literature points out, it is the most efficient application of the concept in the literature; thus fitting into the innate need of business to be efficient and organized, i.e., the organizing metaphor.

The predominant understanding of culture as national categorical dimensions oversimplifies the concept of culture and can be confusing for practitioners who for the most part need to make quick decisions without spending a long time analyzing, reflecting on concepts and theories. They can believe one of two major conceptualizations: either culture is 1) too abstract and therefore not applicable, in other words, not tackle this issue in the organization or 2) cultural understanding

presented in the use of categories and dimensions presented by traditional national culture models. Traditionally as discussed in Chapter 4, culture in organizations and organizational literature has been primarily explored from a national culture perspective, where national and regional cultural traits are grouped into dimensions for simplification purposes. Based on the data and literature reviewed in this study, I believe that this is the figurative fork in the road regarding the study of culture in organizations. On one side we have traditional models and theories for understanding culture that have been applied for understanding culture in organizations and on the other we have a new understanding of culture in organizations, driven by a focus on the context of the organization rather than culture.

For example, in the data from R&D China (excerpt follows), a Chinese engineer says it does not matter how your face looks, or what language you speak, we just need to get down to business. They are right; it is not as much as matter of putting people into categories based on national culture traits (that may not even apply to that person or the context in question) but rather focus on the dynamics of the individual and their interactions and contextual needs.

*“Although we have different culture, it is just like your face is different, your tongue [language] is different but **it doesn’t matter for how we work together in product development**. So, whatever isn’t clear we just need to make good coffee, make a good cup, whether you’re from Denmark, or from China or from America.”* (C015, Chinese engineer)

The above excerpt reinforces the lack of applicability the concept of culture provides knowledge workers in the field due to its notoriously abstract nature. By using an overly simplified example the interviewee indicates the need to focus on task (the making of coffee). I found that this is primarily because while culture seems to be an important aspect in organizations there is no real, clear understanding of it or its usage. Therefore, I believe we should consider culture; how organizations choose to understand, interpret and use the concept of culture in their organizations, there inlays one of the issues.

From the review of the literature I illustrate the variation in understanding the concept of culture and ultimately the data in this study also reveals there is just as much variation in how culture is understood and how it can be used in business. However, there was one stark difference—the data from this study revealed the significance of individuals, of the influence of individuals in the dynamism of culture, and of such characteristics as ‘trust’ and ‘heart’ in how we understand culture in practice.

Proposition 2:

While there may be National tendencies of how individuals think and act in a given country, there is as much variation that does not fit these dimensions. Culture is enacted through the interactions of individuals. There are several factors that affect how individuals think and act in a given context as reviewed in the literature; primarily these factors are experiences, needs and emotions. Therefore, culture in organizations should be seen as:

Culture in organizations is identity-shaping, context-identifying; evolving from the internal cognitive constructs of individuals enacted through interaction and developed through relationships rather than simply where people come from or what language they speak.

The data is line with this thinking as, another Chinese engineer expresses their need to have more knowledge about how to deal with cross-cultural issues; in reality what they seem to be searching for are **“inter- and intra- personal tools”**. In the following excerpt they acknowledge what they have learnt for example, about cultural directness, however, how they desire more!

“Try to catch all differences because I have attended several workshops talking about culture difference but it's up here (emphasis on categories). Okay, Denmark, in Denmark some female smoking, in China, okay, it's not good. Those kind of things is interesting to know but how to get deeper, how to get it... I mean after knowing this, how can we use that benefit our work. Yeah, those things we cannot get from the facilitator, from the professor, who are studying these kind of things, yeah.” (C012, Chinese project manager)

I have identified a distinction between culture in organizations versus the dominant culture theories that have been taught and used in organizations much like Grundfos. The excerpts below provide concrete examples, that culture in today's dynamic environment is not about identifying who is more collectivistic and who is more individualistic. This type of information based on categorical national culture groupings is misleading and according to the excerpts below from Danish engineers is non-consequential for building network relationships.

“It is ways of thinking and cooperating. It is habits. I like to think of it not as differences; there is too much focus on differences... with my interactions with Chinese there is as much difference between individual Chinese as there is between Chinese and Danes. The thinking is what determines how we behave.” (DK014, Danish engineer)

“I think that culture is where you come from and what kind of environment you were brought up in. That is your own culture. And each person has their own culture if you could say that. We all, in Denmark we may (most of us) celebrate Christmas but we may not celebrate it the same way. We may not eat the same food but we have a Christmas tree most of us anyway. But I mean I think it's the same, to me there's no difference from Chinese and Danish...” (C027, Danish expat)

Thinking and interactions where thoughts develop is what determines how individuals behave, which creates culture. Culture is not about control; it is about understanding, building relationships and building trust. It is about adapting and being open to differences in other individuals.

Individuals infer contextual cues to understand their environment and that these judgments are primarily based on visual cues. I would suggest there are three major telling aspects of culture that affect how we understand others. Where an individual comes from, what an individual looks like and what language(s) an individual can speak. These three aspects should be attributed to how individuals tend to see myopically rather than profoundly. Both the literature on learning as well as the literature reviewed on the individual point out that individuals have a predisposition to cluster people into different groupings. Thus, individuals create stereotypes partly on how they have learnt to understand culture from their process of socialization primarily as children and therefore, cultural training builds on the natural predisposition of cognitive processes further segregating people by country of origin characteristics, possibly limiting the ability for individuals to read relevant

contextual cues as well as limiting the potential scope for better understanding others through interaction.

Reconstructing our understanding of culture in organizations *-Three Paths for Improved Collaboration*

Based on the above discussions, including the definition of culture in organizations³⁹ and the two propositions I have therefore identified three ways how the component of culture can facilitate improving collaboration processes. It begins with a reeducation, a refocusing of how we understand the concept of culture in organizations.

The basis for this understanding is simple and permeates from the literature reviewed as well as the data: *culture is enacted through interaction*, indicating the importance of individuals. Thus, to improve collaboration through the component of culture one needs to explore the individual and their interactions in culture. The following three considerations do as such.

1. **Individuals in Culture** (Identity and Perception)
 - a. Re-education of the role of the individual in culture needs to focus on the interplay between identity and perception; how individuals make sense of context.
2. **Individuals in Interaction** (Needs and Relationships)
 - a. A refocusing on needs and relationships will aim at a focus on promoting positive outcomes of interaction and the overall nurturing of the relational bonds and less focus on the differences or the possible miscommunications that can arise in exchanges/interactions.
3. **Culture in Interaction** (Communication and Learning)
 - a. General national culture tendencies only narrow our ability to make sense of contextual cues. Therefore, a re-education of the dynamics of culture enacted through interaction is necessary. Exploring where in our interactions cultural manifestations arise will enable us to identify how to improve these processes by removing a focus again on the myopic differences and instead re-focus on the interactions. This study will focus on communication and learning, two essential aspects of individuals in interaction, of enacted culture.

12.2.1 The Role of the Individual in Culture

Culture is enacted in interaction—individuals in action. Culture becomes irrelevant for a person locked alone in a room since culture is a way to identify people, thus culture is an identifier through individuals interacting. Culture is therefore a combination of how individuals see themselves—*their identity(ies)* and how individuals see and understand the world—the combination of the continuous ebb and flow of *perception* and the interaction between individuals.

For this reason it became clear in this study and for the general purposes of pursuing long-term, invested relationships, it is essential to set National cultural dimensions and categorizations aside

³⁹ Culture in organizations is contextually-dependent dynamics between individuals' cognitive and relational structures and the resulting and evolving understandings gained based on mutually constructed and enacted perceptions that come about through interaction.

and let the interactions clue us into 1) how individuals identify themselves (in other words, their projection of their ideal “I” (self or selves) and 2) how individuals behave (which is highly influenced by how they perceive), ultimately, through time these two aspects of interaction can provide individuals with a picture, an understanding of who the person is in the predominate context that is observed—this long-term process of learning and adaptation can provide individuals with a unique understanding of the other’s culture and thus how to best interact with them in order to improve how communication and all together work best together. The following excerpt from the data collected in China of a Danish expat provides a hands-on example of the above theoretical explanations:

“Even in chaotic or confusing cross-cultural situations, they are not as chaotic if you let yourself be in this environment and accept what’s happening around you. But if you bring in like my Danish mindset to that environment then I get stressed out.

“So maybe the [focus] is more inside [of you], I’m doing this task. It’s okay but if I’m Danish, I would think that maybe the purpose of society would fail if I go there and everything is so chaotic because why is it not more well-structured. Why is the supermarket so crowded? Why is the assistant at the desk so slow and why is it so loud? Everything is just annoying.”

“I think it is context related you know. You can’t bring a Danish context or Danish mindset into a Chinese context because it does not make sense. Of course it does not make sense because you are not in Denmark.”

“I think the challenge we have is to separate somehow [we think] and maybe to be more target driven. Because I think if you have clear targets then you can find a better local base for getting there and you can focus better.” (C023)

The excerpt highlights the importance of the individual and how they interact, the importance of context and how it is important to adapt our focus from our own understanding towards the other. Finally, the above excerpt also illustrates the importance of clear targets, in other words identifying a purpose and key role for the tasks. Thus gathering a frame for order based on the work rather than the people, country or national culture. This task framing can lead to create relational bonds and mutual orientation around the work and these can lead to opening lines of communication that can also lead to positive exchanges and interactions and can lead to developing relationships where reciprocity and trust are present.

The following two excerpts from Danish engineers also illustrate the importance of the individual and their interactions in understanding what culture is in an organizational context. The first excerpt points to the significance of relational ties; how culture is a process rather than a function that can be managed or improved on a general scale as with what the tendency is when using National Culture dimensions. The second excerpt explicitly states what I have realized in this study that in this context where relational bonds, influence and perception are so important for the success of task completion that it is not so much about the national culture the person comes from but more about what the person can offer network members.

“We don’t manage culture. I think that a lot of has to do with building trust with each other.” (DK010)

“It is more about what kind of person are you (instead of what culture you come from).” (DK003)

These final excerpts also address the ever present understanding in organizations of culture from a national culture perspective and how in the everyday work, it is more about individuals in interaction, about the interpersonal dynamics and how to more than just cope but thrive in such an environment.

As I discovered in the literature review there are three key underlying factors for understanding individuals and their interactions: experiences, needs and emotions. These three key aspects are essential for individuals to become more aware of how they affect their perception and understanding of the contextual cues that they take in as they have a great influence on behavior.

As a researcher, it became clear to me during this study that knowledge workers are searching for tools they can apply to their everyday work processes but these have much less to do with cultural training and more to do with inter- and intra- personal dynamics. That is how I set out to understand the phenomena of culture in action, culture at the very micro-level of individuals in interaction. A reeducation of the role of the individual in culture with a focus on the interplay between identity, perception and how we make sense of context aims at taking the concept of culture from abstract or categorical towards a place of application. This is the first consideration; the next two follow.

12.2.2 The Interplay Between Needs (Individuals) & Relationship

Needs as Catalyst for Understanding Others

The second consideration of refocusing our understanding of the concept of culture through the individuals is a focus on the interplay between needs and relationships. Culture is enacted through interaction thus this indicates that individuals and their interactions are highly significant for understanding culture. As I identified in Chapter 11, there are three key underlying factors that characterize an individual, these are: experience, needs and emotions. A refocusing on needs and relationships will aim at an emphasis on positive outcomes and the overall nurturing of the relational bonds and less focus on the possible miscommunications that can arise in exchanges/ interactions.

Here the purpose of focusing on needs is not the self but it is the sum of both parts, in other words, it is not a selfish focus on what an individual can get out of the exchange/interaction/relationship but rather a focus on the individual’s needs, the other’s needs and the relationship, its relational bonds that hold it together, the mutual orientation and a vision of the future of the relationship (the possibility of what is to come). This focus is explicitly contextual in complex knowledge networks that sustain work through a web of both personal and professional network relationships. Relational goals aim at among other things, reciprocity, team work, trust, credibility, follow-through and of course, collaboration. Therefore, a focus on needs first and then the overall status of the relationship (instead of a focus on national culture) will allow for improving work processes.

“Focus on the people and listen to their needs instead of their culture.” (C008)

The above excerpt from a Chinese engineer propelled a cascade of thoughts about the focus we have on culture and if indeed this employee had a point. Of course our cultural background/makeup affects how we see and evaluate the world; our judgments are always value-based and biased, contingent upon our underlying assumptions which are directed by our culture(s).⁴⁰ However, these are mostly unconscious mechanisms that are part of our innate ability to process our surroundings and compartmentalize. As Bruner describes in his Model of Perception, this is our way of understanding and perceiving our environment. This is what Weick refers to with his theory of sensemaking.

Drawing attention again to the three key underlying factors of individuals: experience, needs, and emotions, we can focus on needs instead of other aspects in the communication. If needs are a way to 'bypass' some cross-cultural misunderstandings then does this impact the individual in action and interaction? We can take a common example from organizational life today—responding to emails in a cross-cultural setting.

After reading an email then we need to read it a second time for *meaning capture*. In the process of identifying meaning capture we need to address needs and the underlying motivations with a focus on the longevity of the relationship. By focusing and responding to these instead of assumptions based on culture underpinnings of behavior (that in this example are inferred from an email) it is better to understand the needs and relational context and this will, I believe, enhance and ease communication. This is a way to revise perceptions and filter the existing and new assumptions that clutter communication removing possible cultural misunderstandings by focusing on needs and relationships. Overall, if a focus on practices (such as these) can facilitate positive individual interactions, it can be used as a tool to create a culture of collaborative learning and innovation and strengthen the global network.

12.2.3 Dynamics of culture enacted through interaction

How can we see culture in the interactions of individuals? Where does culture present itself? The third consideration focuses on capturing where in interaction do cultural manifestations present themselves. While there may exist an infinite list of cultural elements in these interactions, focusing on the case of Grundfos R&D, the data and literature both refer to *communication* and *learning* as they are imperative for interaction. Exploring where in interaction cultural manifestations arise will enable us to identify how to improve these processes by removing a focus on the myopic differences and instead re-focus on the aims of the interactions and on developing the relational bonds necessary in these networks.

12.2.3.1 *Communication*

The following excerpt from a Danish manager is a story about learning to communicate and work together with Chinese colleagues. It is a representation of how communication is an integral aspect of culture in action. It illustrates specific characteristics of how and why culture is enacted through individuals interacting. Individuals communicate, perceive and interpret based on the cultural norms they have been exposed to that they identify with and not necessarily the norms that may apply in a

⁴⁰ I refer to culture in the plural form here as it is not our national culture that directs our underlying assumptions but rather a conglomeration and synthesis of various and integrating cultures that together make up who we are.

given multi-cultural context. Thus, individuals express glimpses of their culture(s) through communication, through their interactions; this usually goes unnoticed because everyone is too busy making sense of the situation in their own way. Moreover, a multi-cultural context does not have identifiable cues; it needs to be negotiated as in the following example.

*“You work together. For example, I needed somebody to do thermal simulations...so instead there was an opening for this job in China and there was actually somebody that applied for the job who could do it. SO I asked around and the head of the Fluid Mechanics department just got this application, this person might be the one and we hired him. And he is sitting in China and we do the video conferences every second week. **But it takes a lot of skills from this guy because he has to understand the Danish culture.**”*

Based on the above excerpt I asked the Danish manager a follow up question, “And how is it for you to understand the Chinese or his culture?”

*It takes some efforts because I have to think about it when I **communicate** with him. But I don’t think it’s that difficult.*

Again based upon the ongoing dialogue and the previous answer, I asked another follow-up question, “Do you think it is more difficult for him to understand the Danish culture? What are the things you can see that are either miscommunicated or difficult to communicate?”

*“Actually yes, but the example I’m talking about is working out very well at the moment. In the beginning, was that when he got a task and it was not specified in details he just started doing it all at once and he failed every time. And what he needed to do was to chunk it down and be able to do that himself and **that is part is difficult to understand the Danish culture because you get the overall picture and please go ahead and you need to specify more in details yourself.** So we needed to learn from each other. **That he needed to specify more himself and I needed to give smaller parts of the job at a time.**” (DK017)*

In this last excerpt the Danish manager realizes that it is about identifying personal as well as mutual needs to be successful together. The Danish manager needs to be less abstract and the Chinese employee needs to be more autonomous and self-lead, which is part of the Grundfos culture⁴¹. What I have realized through this study is that while there may exist general tendencies in national cultures as presented in the extant literature, these limit our ability towards understanding human dynamics in multi-culture settings. As presented in the excerpt the Danish manager is so focused on the National cultural differences that it limits their ability to identify the need for the Chinese employee to understand Grundfos culture characteristics such as for example, we work by trial and error, or we work with an autonomous working style. These two examples are specific and explicit tools for improving collaboration that 1) refocus culture at the micro-level, where culture exists through individuals and their interactions and 2) provides practical tools for improving culture and thus collaboration.

⁴¹ See the culture theme under PART II Journey of Discovery Chapter 7, section 7.1, sub-section 7.1.4.4

12.2.3.2 *Learning*

The second aspect of culture in action is the learning aspect from both an intra- and inter-personal perspective. In the case of Grundfos R&D, not only is communication vital for the success of work tasks, learning is also highly significant. Project success and innovation is dependent on the successful implementation of individuals' expertise as well as their ability to collaborate, i.e., group learning. The context already puts individuals in a vulnerable place, the work is intimate and there is a necessity to share and learn together.

The following excerpt is from a discussion about developing a specific technology through global collaboration with a Danish manager. They make references to how chaotic the process of developing new technology can be. How people have to work very closely together in product teams and need to be able to explain their frustrations to one another and find new ways of solving their problems. According to this Danish manager, Chinese colleagues become disillusioned with this process, taking it personally that they are not able to succeed the first time they do complete their tasks.

"You know that I think it's normal product teams. We're sitting close together, talking together and try not to do a lot of paperwork but try to talk.... one of the big issue is that people working with something that's really new, is to let people explain and tell it's not working and why it's not working...When we work with new technology, there are often... [Many changes, first one way] and then you have to go another way.

That's the big communication and that's extremely difficult for people in China because they feel it, "Aaaahhh, I'm not doing my job well," I'm doing it right well but it's not working because we have problems with this and this and this". That's... the issue." (DK016)

From the above excerpt there is a link between learning and culture for collaboration to happen; learning that innovation and R&D is not a smooth process from A to B. There is a lot of trial and error before identifying the right solution. This is also connected to the realizations about learning made in Chapter 7 R&D China. There are two inter-connected aspects of learning, individual learning and group learning. It is in this context that cultural manifestations arise, e.g., Chinese employees are not comfortable with group learning and here it is important to be able to be aware so as to smoothly and more clearly focus on work tasks.

While Chinese employees work very hard to adapt and take up Grundfos and more Western/Global cultural attributes, there are such things in their working style that prove difficult to change. Based on my data in Grundfos R&D China, it seems to be a Chinese attribute to internalize work problems and try to solve it before asking for help or even asking questions. From the data I have realized that Chinese employees think this way for two primary reasons: 1) they perform individually, as discussed in 7.1.2.3. From a Chinese perspective, they are educated to be individual performers and 2) Competition—there is so much competition in the Chinese job market, they do not want to appear weak or less competent, therefore, they believe that solving problems independently is a sure way to excel; while depending on others for assistance is seen as a sign of weakness.

The requirements for inter-personal product team dynamics have not been made explicit. It is not so much a matter of a national culture characteristics, it is more a matter of it being presumed that it should be common sense to do things in a certain way. The realization of highlighting learning as a manifestation of culture in action is with a focus on the interactions between individuals and the focus/purpose on their communication. The data in this case illustrates that assumptions of how work should be conducted and how individuals should behave is linked to the stereotypes assumed. Secondly, the rules of the game have not been made explicit for Chinese employees and moreover, assistance has not been provided for how to develop the skills necessary to tackle product teamwork from a critical thinking perspective; from a trial and error perspective rather than an individual assignment. How individuals learn to learn is a manifestation of their socialization that can be called the foundation of their culture but more specifically the foundation of their identity. This is why I explored learning as part of culture in interaction and why I believe this refocusing on culture in practice through communication and learning can facilitate improvements in collaboration.

12.2.4 Section Summary- Culture

Based on the above discussions, I propose a re-education of the concept of culture in organizations. This section has proposed three considerations for this reconceptualization of culture: 1) individuals in culture through a focus on the inter-relationship between identity and perception, 2) individuals in interaction through a focus on the inter-relationship between needs and relationships and 3) culture in interaction through a focus on communication and learning. The basis for this understanding is simple and permeates from the literature reviewed as well as the data: *culture is enacted through interaction*, indicating the importance of individuals. Thus, to improve collaboration through the component of culture one needs to explore the individual and their interactions in culture. The role of the individual in culture is to focus on their mindset and the importance of context. It is important how they can adapt. And how a task focus and task framing of the situation can lead to positive exchanges, the creation of mutual orientation developing relationships and strengthening relational bonds where reciprocity and trust are present. When exploring culture through individuals in interaction I focus on the symbiosis between needs and relationships. Here the purpose of focusing on needs is not the self but it is the sum of both parts, in other words, it is not a selfish focus on what an individual can get out of the interaction but rather a focus on the individual's needs, the other's needs and the relationship and its potential. Lastly, I explore culture in interaction through communication and learning, getting to a more practical understanding of how cultural is enacted and can be best understood through interaction. This reconceptualization is a way to revise perceptions and focus on needs and relationships and understand how cultural manifestations are part of our everyday activities.

12.3 Understanding Networks for Improving Global Collaboration

Why is it relevant to acknowledge the predominant way we understand networks in organizations and how can this revelation improve collaboration?

As I wrote in the introduction of the analysis, the study and exploration of networks in business literature has focused primarily on the structural approach that does not address individuals, their motives, their environmental constraints or their opportunities that as the data in this study points out does indeed affect interaction. However, the very definition of networks for this study focuses on the significance of individuals and their interactions. In this study I identified a two-part definition for understanding intra-organizational (knowledge) networks as:

- 1) *Human created frameworks for understanding the interlocking web of human interaction necessary to exchange interpersonal resources such as information, competencies, opinions, ideas and expertise, and*
- 2) *as the development of relationships based on continuous interaction with the aim of successful task completion, the reliance of interdependent value in collaborating and the promise/expectation of reciprocity.*

The above definition highlights the importance of four aspects of networks: 1) interaction of individuals, 2) the relational aspect, 3) importance of interdependence and the need for reciprocity to be fulfilled and 4) the longitudinal nature of intra-organizational networks⁴².

The role of networks for collaboration is not just as structures since these frames are human constructed but rather why individual use networks, in other words, *the significant purpose that networks are used for and how these facilitate interaction amongst individuals*. In the pursuit of understanding how to improve collaboration and identifying networks as one of the significant components for improving collaboration, I have identified four key aspects of purposes/roles that promote successful network collaboration, which are by no means exclusive but rather are incredibly inter-related. As the following excerpt illustrates it is about both network (structures) processes and individuals and their interactions-- relationships are needed to create collaboration.

*“Good processes do not make up for poor relationships and good relationships can never make up for poor processes. But we need **both**...There are some things we can solve with process improvements and there are some things (that) we will never solve unless we get those relationships, which are grounded in **trust** and **respect** and a **spirit of collaboration**.”*
(USA001)

The above excerpt from an American engineer focuses on the dichotomy, the paradox that exists within organizations; the process or people issue. After reviewing the literature and getting a wider perspective of the data collected I believe this issue stems from organizations innately desiring to organize and make things more efficient. The literature referred to this perspective as the *organizing metaphor*. This study follows the data, understanding the context and the aims and ambitions of

⁴² See section 10.9.1 for a discussion of these four aspects.

Grundfos R&D. And while the human aspect has to a great degree been pushed to the sidelines in business literature this study has grasped on to the data that is rich with anecdotes, personal experiences, frustrations, drives, success stories and much more that have to do with the human experience. As I discussed above in defining networks as well as the excerpt above both illustrate that networks are not just structures or frames for processes but it is the relationships of the individuals that use the frames that together make the concept of networks a significant component for improving collaboration.

Therefore, this study proposes that:

Proposition 3:

Networks are driven by the interactions and the relationships of individuals.

Networks are dynamic structures and adapt to the changes brought about by individuals and their interactions. Without interacting individuals, there would be no networks.

Proposition 4:

The establishment of roles and purpose, gaining access to the right information and people, participation in relevant network activities and relational interdependency are necessary for successful network usage.

The following section will expand on the above proposition in greater detail.

Identifying Four Key Purposes/Roles for Successful Network Collaboration

The above contextual presentation introduces what I have identified as the four aspects that are key purpose/roles for improving collaboration processes through the network component. The following will be expanded on below:

- Achieving task fulfillment
- Gain access to information & knowledge
- Develop relationships
- Participate in network activities

I would like to state here that these revelations are specific to this study and the context remains specific to intra-organizational knowledge networks, where network members should be more invested in one another than in other network structures. Each of these four roles is essential towards success as a network member in Grundfos R&D.

12.3.1 Achieving Task Fulfillment (purpose)

A basic understanding of using and participating in a network organization is to identify your role, task and purpose and then finding relevant connections (other individuals) that can help you achieve your goals and succeed at your tasks. As Grundfos continues to grow and continues to add R&D units to their Global R&D Network, there may exist difficulties in prioritizing strategic ambitions for the respective regions and the global agenda simultaneously, which in practical terms will affect daily work process, i.e., how project and functional managers and employees work together. This is what the literature referred to as, 'wicked problems' since decisions are closely intertwined with other

people, projects, etc. While the organization prides itself on a high levels of autonomy I believe that management has a responsibility as leaders to follow the 'red thread' through (accountability) and despite the complexity to make sure that overall organizational strategies are not being misinterpreted along the way to fit regional, functional and/or personal objectives. In such an autonomous environment both employees as well as management should be aware of the phenomena "what's in it for me?" uncovered by the data collected. From an employee perspective focusing and achieving task completion, i.e., finding your purpose in the network is very important in complex intra-organizational knowledge networks such as in Grundfos' R&D network.

As part of this first key role of networks I will focus on four underlying aspects that will facilitate how individuals in this context can better understand their environment as well as their role in it and thus improve on how they achieve work goals. The four underlying aspects are: **1) understanding the role of a knowledge worker, 2) role clarification, 3) developing high capacity learners, and 4) competency development- networking** (specifically focused for complex knowledge networks). Understanding the role of employees as knowledge workers truly takes into consideration the breadth of what their job encompasses. Secondly, role clarification is necessary when the structure is complex and the size of the network is as large as it is now and aimed at a continual increase in the years to come. Reestablishing continuous clarification of employee and managerial roles will facilitate the alignment and interpretation of strategic initiatives. Thirdly, developing high capacity learners is about providing employees with inter- and intra-personal tools and management with the awareness of the need for these tools and lastly, the ability to truly understand and use networking competency for this specific context is vital skill for network participants to have.

11.1.1.1 Understanding the role of a knowledge worker

Proposition 5:

Network participants in the case of Grundfos R&D should be understood as knowledge workers.

Who are the individuals participating in these networks? They are knowledge workers. While the majority of the employees are engineers, the label, title and role is limiting in what these individuals need to do in R&D knowledge networks to achieve their work goals. I will discuss identity and influence in the next section, for now I want to focus on the definition and role of knowledge worker and what that implies.

In the introduction of this study I defined knowledge worker as, "person with the motivation and capacity to create new insights and to communicate, coach, and facilitate the implementation of new ideas (Horwitz et al. 2006; Horwitz, Heng and Quazi, 2003 in Chieh-Peng, Lin 2010:300). More concretely we can identify their work as, "open-ended, creative, individually styled, and cannot be standardized or fully planned out in advance (Bell 1973). Thus tasks and responsibilities cannot be cleanly divided up amongst individuals ahead of time. Furthermore, knowledge work consists of complex, analytic, and abstract processing of information and knowledge (Barley & Orr, 1997; Savage, 1990; Stehr, 1994; Zuboff, 1988) raising the constant possibility of mismatches between the division of roles and the division of skills and knowledge.

As a result, knowledge work is highly interdependent, with individuals frequently consulting each other and exchanging information about their tasks. In such circumstances the help of others is needed by individuals to make progress on their own work; helping is needed within groups to ensure that outputs produced by one person are consistent with inputs required by another; and helping is needed within organizations for efficiency, flexibility, learning, and innovation (see, e.g., Malone & Rockart, 1991; Nickerson, 1992; Sproull & Kiesler, 1991; Walton, 1989).“ (Perlow and Weeks 2002: 346)

11.1.1.2 Role Clarification

*“I think that you have to be very aware that **the network has to have a pre-defined goal**. So there has to be a mission. And you also have to be aware of what it is not. It is just as important. So you also have to ensure there are some processes in the network and that has to be some systems for how the network should work, for example, communication forms.”* (DK010)

Proposition 6

Role clarification is necessary when the structure is complex and the size of the network is as large as it is now and aimed at a continual increase in the years to come. Reestablishing continuous clarification of employee and managerial roles will facilitate the alignment and interpretation of strategic initiatives.

In Chapter 4 where I presented my conceptual framework for understanding the three components I defined knowledge workers as individuals that *in very practical terms need one another, they need to be adaptable to a highly complex environment, and they need to remove skepticism and be more inclusive*. My original conceptualization and thoughts on knowledge workers is not too far off from the literature and how the data represents the work being done. Both management and employees need to more explicitly understand the role and expectations that are just implied. Part of the complexity lays in that need for individuals to be able to identify the needs of the company as a whole, and interpret these in their respective function, projects, networks, groups, etc. The organization, with its call for autonomous workers, places a large responsibility on the individuals to work together and figure out how to achieve work tasks. Under the fourth point below competency development- networking I present an excerpt from a Danish engineer where they discuss how the organization will change because of the need for networking as part of the job.

Another Danish manager adds that it is through empowerment that individuals are engaged to participate as this inclusion into the greater purpose provides a sense of ownership for employees.

*“I would just take a phone call and e-mail; bring people in so they feel they are part of it. I think that if you just get [told by your boss], “okay please do this, this and this” Yes, of course if you say I have to do it... but if my manager is calling me and says, “Okay, I want you to do this now,” explain what’s it about and let me be a part of this dream or whatever, that is much more easy. **If it’s possible for you to make people feel that they are important, that they are part of a dream, they are part of something big and they are responsible for what they’re doing, then... then.....For example, if we have to do a presentation for the top***

management, bring in the people! It's not me who should do it; it's the people who have done the job. That's one way to do it." (DK016)

11.1.1.3 High Capacity Learner

Developing high capacity learners is about providing employees with inter- and intra-personal tools and management with the awareness of the need for these tools. Based on a synthesis between data and theory and having a new understanding of the role of knowledge workers it is important to provide these individuals with a tool box for navigating networks and maintaining relationship in complex environments. More specifically, I can identify six key assets of a high capacity learner: 1) open (trusting or adaptable also apply here), 2) influential, 3) credible, 4) context-focused, 5) needs-driven yet 6) relationship-based. It is the combination of these assets that allows an individual to become a high capacity learner. It is individuals with these types of personal characteristics that are able to improve development, change mindsets, increase confidence in other's ability, create opportunity for positive exchanges that promote the development of mutual orientation and the developed of strong working relationships.

The R&D US data illustrates this point in the excerpt below from an American manager where the individual evaluates situations not just from their own perspective but rather from others' perspectives as well. By 'casting' yourself onto another you have a greater chance to be able to understand where others are coming from. It is this understanding that is the start of finding ways to create common ground. As the interviewee states, by putting yourself in the other's position you are better able to imagine what it is like for them as being them instead of understanding their situation being yourself.

*"You always try to **cast yourself to the other**, whatever the other is- whether it is your competitor, whether it is your colleague in a different country, you know.... whether it is, "I am responsible for the globe or I am responsible for North America" you know, you try to put yourself in the other position and imagine what that is like...."* (USA001)

In R&D China, the data also points towards a need to improve soft skills. From the data collected it is apparent that in general, Chinese employees (there can be exceptions) do not truly understand the need for so much talking, meetings and discussion. However, there are several participants including the following Chinese employee that also suggest the importance of good listening. In the excerpt below, we explore how specifically in virtual communication, it is important to listen. Listening is not just about understanding the words; it is about capturing meaning behind the words.

Technical tools such as Adobe connect and conference calls are used to facilitate working across physical distance. It is most important to, *"listen to your customers; listening carefully. You have to understand what they say. This is important. I think listening and learn more carefully."* (C024).

For this reason or perhaps also because of this reason, the last part of Chapter 11 individuals and their interactions, provides four social process techniques such as, 1) Perceptual Readiness, 2) Sensemaking abilities, 3) self-monitoring and 4) social comparison theory that will assist individuals in understanding their environment and becoming more aware of their behavior.

11.1.1.4 Competency Development- Networking

As the excerpt below from a Danish manager revealed work success rests very much on their ability to successfully build a network. The focus here is that individuals in this context cannot succeed on their own. It is the link between building up a network(s), i.e., network relationships and how individuals use these that provide the highest opportunities for work success.

"It is extremely important that you build up your own network. You have to find out who in the organization can help me to accomplish my tasks. The stronger you are in building networks the more efficient you will be in the work." (DK021)

Another Danish manager reflects about the future of R&D networks and the importance of knowing how to network in this context for success.

*"When I say not forcing it means that we will see here that in the coming years that as part of the jobs there needs to be networking. And there will be fewer jobs where you can actually be specialist and not do networking. It means that either we should say that we expect of you to do this networking or you should take one of the few jobs as specialist but that could be a situation where there are not enough specialist jobs at all. But then we talk about having a **change in their employee profile, set up in the whole organization**. I would not be surprised if we would see that happening over the coming years. Also people leaving due to this because they don't like it. Maybe they go to a smaller company where globalization is not such a hot issue. Where they can be specialist. I don't think you will get anything good out of forcing people into it. But when that is said, I also think that we should be pretty **clear** about our **expectations** and the coming work profiles for R&D engineers most of them need to be able to network also. Then some few can be real specialist and don't think about network but a **big part of the organization needs to be a good networker**."* (DK008)

The data collected in R&D China points specifically towards difficulties in understanding the dynamics of networking and building relationships and the significance these have towards success and task completion. Based on the data collected Chinese employees are task-focused, and may not entirely understand the meeting and dialogue-based processes in Grundfos R&D. Since they are focused on individually identifying solutions they may encounter difficulties in collaborating.

The following excerpt is from a discussion about developing a specific technology through global collaboration with a Danish manager. They make references to how chaotic the process of developing new technology can be. How people have to work very closely together in product teams and need to be able to explain their frustrations to one another and find new ways of solving their problems. According to this Danish manager, Chinese colleagues become disillusioned with this process, taking it personally that they are not able to succeed the first time they do complete their tasks.

"You know that I think it's normal product teams. We're sitting close together, talking together and try not to do a lot of paperwork but try to talk.... one of the big issue is that people working with something that's really new, is to let people explain and tell it's not working and why it's not working...When we work with new technology, there are often... [Many changes, first one way] and then you have to go another way."

That's the big communication and that's extremely difficult for people in China because they feel it, "Aaaahhh, I'm not doing my job well," I'm doing it right well but it's not working because we have problems with this and this and this". That's... the issue." (DK016)

As the data shows, part of collaborating for product development is sharing the process and whatever issues may arise and working them out together. This goes against the Chinese employee's preferred communication style, i.e., don't ask for help until you have exhausted other resources as well as their desire to succeed on their own. Perhaps the most common statement in the interviews I conducted is that Danes, especially in Grundfos, are direct and like to talk and discuss a lot. The following excerpt from a Chinese employee specifically indicates that a lot of discussion is a waste of time.

"...a lot of discussion and a lot of time to think about it." (C009)

The inability for R&D China employees' to comprehend the importance of networking together with the two specific issues exposed by the R&D US data below illustrate the barriers towards bringing Grundfos R&D China up to a competitive level. Therefore, in order to achieve work goals through networking, Grundfos should consider how to explicitly formulate what networking means in Grundfos R&D.

The data in R&D US points towards difficulties in being able to actually start developing networks due to the distance. Here, the data also exposed two highly related and specific issues: 1) the, 'out of sight, out of mind' phenomenon and 2) physical proximity vs. relational proximity.

*"When you are there [in R&D Denmark] working with them personally they look at you and they listen. ...the distance, talking on the phone or email, is whole lot different than sitting in front of them and having a discussion. They seemed very intent. **The engineers would listen as if they were learning something from you. And that was good. I really enjoyed that.** Because sometimes when I was over there I felt overwhelmed, "wow, these people are smart." Everyone knows exactly what they are doing, they are very structured and they are very good at what they do. But they were friendly; they were not demeaning in a face to face thing. And they are not really demeaning now. **They just don't want to listen when you are on the phone or email.** When you are face to face they are very receptive, very friendly."* (USA003)

The above excerpt from an American engineer focuses on reflecting upon the relationships in both a face-to-face setting and a virtual one. While the data acknowledges the importance of face-to-face meetings, of having the opportunity of working and co-creating experiences together and how these interactions, when positive, have the potential to strengthen mutual interests and relational bonds, however, it is important to consider that physical proximity, in this case, face-to-face meetings cannot take the place of relational proximity that is free from the effects of physical distance.

The aim for Grundfos R&D should be to create opportunities where these face-to-face meetings are positive experiences that will counter the out of sight, out of mind mentality that comes from working in a multi-national environment. If we recall the data in R&D US, an American engineer considers how we prioritize our communications, our actions by associations.

*"Everyone does it. Humans do that. I am much more receptive to somebody that I know, getting an email from them, than someone that I have no idea who they are. You know I will get back to them, but they will not be on the top of my list to get back to them if I don't know them. If I get something (email) from someone I know over there, yup, then I will get back to them pretty quickly, usually. The other ones, I will get back to them in a day or so. The information you send back to them is probably a bit more generic, and short. **Yes, I prioritize people I know.** Unless the email says urgent, I will prioritize my work by whom I know."* (USA002)

Developing the competence to network, goes hand in hand with the capacity to create, maintain and nurture relationships. The following three excerpts from Danish managers all point to the importance of meeting face to face. In a Danish context it provides opportunity for clarification and in a Danish/ Chinese context it provides an opportunity to place a face to a name and share experiences where one can begin to build a relationship upon.

*"We know that even though we are all Danish and we sit in the same room we can misunderstand one another. **So in general, we can clarify and resolve them pretty quickly because we work in close proximity to one another so we experience, "oh no, that is not what I meant with that word"**." (DK010)*

"It is clear, yes, we do of course have experience that those that meet F2F, it makes it easier and the Chinese employees are more prone to come and ask if for assistance if they have met in person. This is true." (DK006)

*"I know that we cannot travel all the time. Web, chat, telephone but once in a while it is important to see one another. **If you have to work together than there is a need that people meet face to face once in a while.**" (DK002)*

In the following excerpt a Chinese manager acknowledges the existing differences and what they believe is the cause of it.

*"In China culture, actually we like to build relationships, but according to current employee personality for unknown people, maybe **not easy to build networking**, I feel in my team. But, they need to change their mindset. For me, not a big, not a problem. I can speak to any new person in any organization **because I already change the mindset and culture.** But, in new employee in my organization, according to their personality, some employee, you already built the network for him, but he still not really use it. Maybe because of **language level** or because he thinks the **personality not really like communication.** So, I feel the culture is okay, not really affect too much the job, but the personality really, really, affect their job. Depending on we choose the right person for this job, then no culture issue." (C021).*

This employee meets others where they are, they identify others' needs and through these mutual interest. When they are in dialogue with others they place their emphasis on the dialogue and on the other. They are not trying to explicate prove who they are or sell something. There is a sense of energy and enthusiasm they exude; they are interested in talking with you. This shows others that they are investing time and energy, in other words that they are important.

While the data identifies specific differences between how Danes and Chinese understand networking, i.e., learning styles and communication preferences, we should remain focused that this issue is a people issue and while there may exist reasons such as how individuals learn that may make it difficult for Chinese employees to understand what Grundfos means by, 'building up your network for success', it does not mean that this is a national culture issue. This is a people issue; some are comfortable networking while others are simply not familiar with this competence.

The following excerpt from an Expat in China illustrates that networking is a people issue as well as identifying the Grundfos context as network-based.

"Depends on who you are, I think. For me, it is not difficult because I like to make networks across departments, but if you don't like to do that, if you want to work in a box not in a negative way, but if you want to access information in a structured way like a database, I think Grundfos is very difficult." (C023)

Everyone in the R&D network should be given the opportunity to learn what networking specifically entails for Grundfos, provided with tools to better navigate their existing networks and provided with the opportunities to make new network connections. Moreover, management should make it explicit what it means to network for Grundfos as this is understood as part of the context but only implied or understood through being part of the context; knowing this is one of the ways individuals interact in this context does not mean that individuals are fully aware of how to do it themselves.

The right person for the job understands the competencies that are needed to fulfill the job despite of their cultural background. For some few they start already knowing this, however, for the grand majority this is something they learn on the job. This is what the participant refers to as changing the mindset and culture.

The subtle distinction in this excerpt between individuals and culture is one of the reasons the data continued to lead me down this path of exploring the individual's role in culture and in the dynamic context. This excerpt points to practical application of culture, which is among other things, the individual's role, identity, personality in the organization. The individual has certain habits based on the cultural manifestations they have observed, however once they enter into the new context, i.e., Grundfos, it is important to identify new habits to go along with new norms and the expectations that lay therein.

There are people that prefer not to be social, introverts, but that does not mean that they cannot be successful participants in knowledge networks. Just as with anything else, individuals can be provided the information to learn tools to be able to successfully perform.

12.3.2 Gain access to information & knowledge

The second key purpose/role for networks is in the ability to gain access to information. Grundfos R&D is highly influenced by the willingness of individuals to share, to discuss and their overall desire to learn and to create. A Danish expat explained it as,

"Knowledge is carried amongst people." (C028)

In other words, carried amongst people is representative of the interactions and relationships amongst people. Moreover, the following excerpt by a Danish manager explains how the knowledge one possesses will only live on and increase if it is shared instead of protected.

*“I have also experienced people that come to Grundfos from other organizations that are overwhelmed at how much we are willing to share our knowledge. And in other organizations people say that my knowledge is my value. **And if you can simply put it, I think you can say there is a good understanding that survival is not contingent upon protecting your knowledge but rather in developing it and you do this by sharing it with others.**” (DK010)*

*“It is extremely easy to find access to help within Grundfos culture. We are good to share our knowledge. And I also believe many in our global units have also experienced. It can be that sometimes it is not successful due to **other barriers**... it can be difficult over a phone; it can be it does not happen so effectively. But I don’t believe it is a lack of willingness to share. But on the other hand I am sure you could find particular examples, **but in general in the organization there is a willingness to share.**” (DK010)*

I had a very interesting interview with a Danish manager, when I asked the following question, “Is there place or database where you as an engineer can see what other labs or other people are working on in other units? Globally?” Their answer is quite revealing.

“No, it’s word of mouth. You need to talk to the right people and ask what is going on and visit once in a while.”

I followed our dialogue with a confirming comment to make sure I understood as I was quite shocked, “So you can miss out on a lot...” and they replied,

“Yes, I think that is happening a lot. The only way of doing it is talk to somebody that has a huge network. So they would know somebody and you would go and ask and ask and ask...”

Their answer made me think about the aim of creating a global knowledge network, therefore, I was compelled to ask about how this affected knowledge sharing, “...so not only is the network somewhat invisible maybe this also contributes to knowledge transfer or knowledge sharing to be quite difficult...” They replied,

“Yes, I think it is difficult, also because of the initial effort to get to know each other; especially for engineers that is a tough task to try to do this kind of work.” (DK017)

The great paradox is that individuals in Grundfos R&D Networks need to establish what the literature calls know-who to get ahold of know-how. Individuals need to know ‘established others’ in order to gain access to information and they also need to know ‘established others’ to more easily access other network members. Every Grundfos employee has a designated initial, mine was MXJ and you can locate employees through the Grundfos intranet, *Insites* by way of these initials, however, as the following excerpt addresses, the system is not functioning as it should.

*“An organization that has some systems in place where people have the opportunity for networking and finding the right people and it should be pretty simple to keep oriented in what colleagues are doing around the world. Common sense, IT systems.” Currently, we have Insites (name for the Grundfos intranet) but search engine is not functioning as it should and if you need to network when the organization is as big as it is and plans to continue to grow, the problem is not getting information, if I were to read all the updates then I would not have time for anything else. **The point is to be able to search effectively.**” (DK019)*

However, as the data points out, it is more promising to get introduced to other network members by a mutual contact; by having an existing network members introduce you and/or vouch for you there is a preference to trust you based on the pre-existing relationship of the mutual contact. For example, managers and expats have a role as network conduits, linking new networks members with existing ones. The following excerpt from an American manager illustrates this point.

“So, in my role now, in addition to just those years of experience, I also have a supervisory role... I have two persons that work for me, and part of my role with those persons is just to expose them to those networks so they can utilize those other experiences and those persons.” (USA005)

The above excerpt the manager provides a level of trust by linking individuals together; it is based on their relationships that others are given a chance. So, instead of coming in as total strangers they have support and are 'sponsored' or represented by the manager. This individual exposes other network participants and by doing so expands the potential of the network to cultivate new knowledge possibilities and create innovative solutions, creating multi-dimensional solutions for singular contextually related phenomena. Instead of having to build up positive encounters and identify mutual interests, the mutual contact and the reason for the introduction becomes the initial mutual interest and usually these types of introductions are positive in nature, leading the way for a good work relationship. Another way of establishing a network is through reputation through the work that you do and the expertise that you acquire and your willingness to share this knowledge.

However, as the following excerpt also states, identifying the right people can be difficult. The following excerpt from a Danish expat discusses the real difficulties of knowing the right people in Grundfos and with their new job in China they need to work on establishing their network as well.

*I also think for us is also so much about our network the easier way of communicating and you know inside [Grundfos Denmark] there is so much knowledge that you can gain if you know the right people. **“That’s the difficult part to get to know the right people.***

Even for Danes that are stationed in China, establishing new networks that support the new job tasks is not as easy as it may appear. There is one account of establishing a new network, *“I spent a long, long time on that as well, building my network for this job the last three years, I have a whole new network. That was actually hard. That was not easy.” (C027).*

It also depends if you are reaching the right people and if the people you are reaching have the right state of mind that matches with the ambitions of Grundfos becoming a global leader and having a global network working environment. In a very candid interview another Danish expat admits that it can be very tedious to work the network from China because you can work really hard to get a network connection going, *“But maybe you are not getting the right persons, maybe you are getting some of those persons that have a lot to do and maybe they feel that this is annoying and say ‘Why ask me, can't you ask another guy’.* (C028) So there is yet another layer to this situation that you may reaching the right contact, however, they are overburdened by all their tasks, so how do we prepare Grundfos Denmark for the globalization that Grundfos wants to achieve?

From the above discussions, it should be understood that access to information is relation-based and to some extent there should be some type of trust present for individuals to be willing to share information. Here again we meet the ‘out of sight, out of mind’ phenomenon when R&D DK is skeptical of trusting foreign colleagues. The following excerpt from an American engineer focuses on presenting the problem of access to information.

“Right now there are two big things I struggle with: access to documents and access to information. I have a software guy on my team, he was trying to work on a project and he got completely locked out of access to any software stuff. Because they were trying to figure out if he should have access to these things. For security [reasons]... (perhaps), whatever,. You know because now it's out of Denmark. So we don't have control over what he does with this information.” (USA002)

Moreover, as the following excerpt from a Danish manager explicitly states that it is extremely difficult to get the right information to the right people at the right time.

*“Myself, what I am trying to do is, I am trying to communicate EVERYTHING I find relevant. But even though I am forcing myself to do that, then I can see that some **information is missed by the members of my organization, which are not sitting here in Bjerringbro**, because, you could say, The people sitting here in Bjerringbro are also getting information from other sources than just me... so it is an extremely difficult task to get the right information to the right people at the right time.”* (DK005)

12.3.3 Develop relationships

In the context of this study in Grundfos R&D, the data has revealed that relationships are vital for network exchanges. One of the most basic ways knowledge workers build relationships and build trust is through their work; in other words, credibility. If an individual is not credible, it will be difficult for others to trust them. I did not find anyone in this predicament and this is probably due to the awareness of network members to be successful rests upon network relationships. However, a significant amount of data addresses these assumptions.

The third key purpose/role of networks is to facilitate the development of relationships amongst network members. The iterative process from data to literature as well as a reflective process has revealed that there exist four essential underlying aspects essential for relationship development in

networks such as the R&D network for Grundfos, **1) mutual interests, 2) credibility, 3) influence and 4) trust**. Developing relationships in this context is about identifying mutual interests that create and strengthen relational bonds which facilitate the development of trust and due to the use of informal networks in such a context as the data stated, a political culture develops the need for network members to use evaluative criteria such as credibility and influence.

Mutual Interests are essential; they are like glue that initially bonds network members together. And as the first of four key purpose/roles of networks established above, there needs to be a purpose reason for actions in networks. The following excerpt from a Danish engineer addresses the importance of mutual interests through mutual benefits.

*“But again **networking only makes sense if there is a gain**. And this has to be for **both employees not only one**. If you are delivering all the time you tend to back out of the network.” (DK021)*

Establishing mutual interests what the literature calls *mutual orientation*, begins in the everyday interactions of network members; through relatively small and simple interactions. There are two aspects of mutual orientation at the network level and at the individual level. At the network level-creating opportunities for interaction that ignite mutual interests and at the individual level, creating and building on positive exchanges to fuel the mutual interest becomes developed into actual work tasks/ projects/ part of products and/or new products. For example, the in the following excerpt a US engineer talks about how being asked to be part of a design review made them feel included, understood and thought of as intellectual assets not just “labor”.

“For example, when we were asked to be part of a design review; that was totally their idea and it made me feel great! That group is accepting us. You may have some valuable input, you are not just someone over there [in regards to the US] performing labor. You can think too. And they believe you! It is great, it strengthens the relationships.” (USA003)

The above excerpt from an American engineer is great for a number of reasons. It shows how important it is for the building of network relationships to have mutual collaboration. It shows that it is in these relatively small and simple interactions that individuals first get an opportunity to build network relationships. Here too, we see the development of global collaboration. Global collaboration is envisioned in the groups of management but built on the shoulders of every employee doing their daily tasks. Danish colleagues asked this engineer to be part of this design review because they had met him face-to-face in Denmark. They believed this engineer was credible to facilitate a design review.

The second underlying aspect essential to developing network relationships is credibility. Throughout this analysis I have focused on highlighting data points that illustrate the concepts and underlying aspects of these that help us understand the situation, the components and how these can improve collaboration processes. For engineers expertise is very important aspect of an individual's success. In informal networks, how credible you are and your ability to influence others grants access to information through the building of relationships and the formation of trust.

Here I want to address one of the perceptual barriers, perception of R&D as part of HQ vs. as R&D DK, part of the R&D network and how the phenomena, 'out of sight, out of mind' have a great deal to do with all four underlying aspects presented here.

The data for both R&D US and R&D China exemplify how the issue of 'out of sight, out of mind' impedes collaboration between HQs and other units to be willing to share and interact. Here we see the first indications of needs on the one hands and the focus on how to influence others (distant strangers) to want and need to work with you. It is difficult to develop relationships between distance network members in the absence of the four underlying aspects. However, as the following excerpt illustrates when relational bonds are created, no longer does the perception of R&D as a distant stranger remain, and the initiated relational proximity trumps the need for physical proximity.

"It is interesting, there is a big difference when you try to communicate with the members over there [DK] and you have not met them yet compared to when you have been there and you have had dinner and you drink a few beers and you come back. There is a huge difference between the two." (USA 002)

This excerpt from an American engineer is describing a successful example of how associations have been accumulated for him in the past. These experiences have helped them in establishing relationships and lines of 'priority' throughout their network. The issue this is touching upon here is that it is not enough to have established distinctions of priority in your network relations. It is also contingent upon how 'important' or 'valuable' you are to others in your network(s). This is the case in the US R&D unit, at this moment in time they are more valuable than they were upon the establishment in 2004, however, based on the data, there is still a need to create awareness and this is partly done through influence and partly through establishing credibility.

The last underlying aspect of developing relationships is trust. The data has revealed that trust is necessary when sharing knowledge and information. Again we follow the thoughts of the American engineer as they explain their perceptions of the relationship between R&D US and R&D DK.

*"I don't think that the [Danish] lab **trusts** the North American locations yet because they just don't **know what we do and what we are capable of**. It's a **trust** thing and I don't mean it in a negative thing; **it's about the newness of the collaboration**. Think about it, Denmark is being asked to open their minds and expand their horizons and it's just not something that they are used to."* (USA003)

It is important to not take this out of context. The above excerpt from an American Engineer is based on the reflections of an individual dealing with access issues within their own organization. They feel that they have to win their colleagues trust in order to begin collaboration. In the process of their reflection they interpret the age of the organization and the lack of having to collaborate in the past as indications for the difficulties that they have encountered. Also, from an engineering culture perspective Engineers working in a global or international setting have been constantly warned against sharing knowledge and information and the risks of it being copied or leaked. This can be another reason that individuals are hesitant in trusting and sharing their information and knowledge.

There are two other important aspects to be taken into consideration in this excerpt. One, when the interviewee says, “they don’t know what we do and what we are capable of...”, they make a point that has come up several times already under other themes and that is about understanding coupled with associations and perceptions. One could infer that what the interviewee is saying is that if they knew us and what we did, and our competencies then they would trust us, in other words, credibility.

Association is at the core of trust because it makes up for the basis of how we understand and perceive the world around us. Hypothetically speaking, I believe that it can even be taken even further and more concise, *if they knew us they would trust us*. This brings me to the other important aspect to consider that being trust. Trust may seem like a simple construct but when you begin to define it and make sense of it, it can be complicated. For the interviewee it remains relatively simple...if you knew us, you would trust us. And what does it entail to be trusted, in this context... For the interviewee, it means to be thought of, to be understood- as a valuable contributing member of the global network. If you don’t know me, then how can you trust me? Thus, trust has the possibility to emerge and grow at every encounter, essential for initiating/developing relationships.

12.3.4 Participate in network activities

The last key purpose/role of networks is participation. As has been established in the last three key purpose/roles of networks, network relations are essential for work success and establishing mutual interests, proving ones credibility and influencing others facilitates strengthening relational bonds that provide an opportunity to build trust in network relationships. However, in order to establish relationships network members have to participate actively where they believe it would be most beneficial to help them achieve their work goals. The primary issue here is that when the network is global, thus virtual, it inhibits the ability of all network members to be privy to the same environment and thus the same opportunities. Here management has a key role in developing meaningful opportunities for network members to participate in network activities that can provide them with 1) access to network members, 2) access to information and 3) opportunity to share experiences and learn from one another.

The following excerpt from an American engineer recounts a story about global collaboration. When we think of relations we tend to think that proximity is analogous with closeness. However, in a network construct it may not be the case at all. Physical presence does not dictate how relevant, important or valuable a relationship can be. I believe this is because usually we think of relations on a personal level and the case of proximity does then play a key role in closeness. Usually those around you physically such as your family, friends and colleagues tend to have the greatest significance to influence and interact with you. However, when we explore the concept of relations on a greater, more abstract scale we can see as this example clarifies the above distinction. The engineer contacts their colleagues in China thinking that since they were closest physically to the contact they would be the best to lend assistance in connecting and smoothing out the relationship. However, it was someone in the global department that had a closer connection with this supplier even though they are physically located in Denmark. Therefore, physical proximity does not signify relational proximity or closeness.

“...in China.... recently, I pursued the [not specifying the type] manager for China, because we were trying to launch a new product for later this year with a very truncated timeline and the supplier choice that we have made is in that region. So I went to my contact to find out if we could, somehow, use and collaborate with their resources that have already had contacts with this supplier in order to figure out how we do business with them...As it turns out, even though they would’ve probably been willing to help me if they had more resources, there was also a global department that was really even closer to that supplier. So, our team ended up going with this other group. If all [Grundfos] is on the same page, understand the priorities, understand the direction and not only do we have individual regions that have directions but those regions have directions that all point roughly in the right direction globally.”
(USA005)

12.3.5 Section Summary- Networks

The above discussions has been focused on understanding how to improve collaboration through the concept of networks in complex multi-national intra-organizational knowledge networks such as the R&D network in Grundfos. By contextually exploring how individuals used networks I uncovered four key roles/purpose that networks in this study are used for, namely: 1) to achieve work goals, 2) access information, 3) develop relationships and 4) to participate in network activities. As I mentioned at this start of this section these four aspects are not exclusive of one another but rather inter-related, e.g. in order to be successful at your work goals you need the right information and in order to gain access to the right information you need to know the right people who you only meet if you participate in network activities. It should be increasingly apparent how significant the role of individuals and their interactions is towards improving collaboration processes.

12.4 Understanding Individuals for Improving Global Collaboration

Why is it relevant to acknowledge the predominant way we understand individuals and their interactions in organizations and how can this revelation improve collaboration?

Individuals and their interactions are fundamentally essential for intra-organizational, multi-national knowledge networks to accomplish their objectives. So far, this analysis has illustrated the significance of individuals and their interactions through the presentation of both the culture component and the network component. Under the culture discussion culture is analyzed through individuals in culture and I identify identity and perception, as well as needs and relationships as four main vehicles for understanding culture through individuals and their interactions. In the networks discussion I also focus on individuals as the data and literature places emphasis on the importance of individuals and relationships for the success of network goals through a focus on developing mutual interest and trust in relationships. This section will solely explore individuals and their interactions providing an opportunity to better understand such an essential aspect of such an inter-dependent context such as Grundfos R&D Global network. The following four excerpts address the importance of working together, with a common purpose, learning from one another.

“At the end of the day when you look at networks we are all people and individuals that impact how we function together.” (C012)

*“We as individuals tend to learn better when we see things being done. We have that part, I think, no matter where we come from. **A part of that is that we tend to learn better and understand better when we interact.** But the networking is a huge part of it.” (C028)*

*“I think **teamwork** is something we mentioned pretty [often] because no one can be independent or too close everything especially given the current situation. It's very important. Teamwork means you share the vision, you work for the same direction, but also, **I think, teamwork means the synergy of the strengths from everyone.**” (C001)*

*“Knowledge is **carried amongst people.**” (C028)*

For the purposes of this study, we need to simplify how we understand the individual. I have identified a simplified two-part understanding of individuals and their interactions. First, following three key underlying factors: 1) experiences, 2) needs and 3) emotions can be used as drivers of interaction and define how individuals see and understand the world around them. Secondly, there exists a symbiotic relationship between individuals (and by that I mean the internal cognitive processes and the processes of external inputs) and associative properties; in other words, the inter-relationship between cognition and interaction.

12.4.1 Simplifying how we define the Individual for complex business networks

Experiences, Needs and Emotions

Proposition 7:

Experiences, needs and emotions are three basic yet fundamental aspects of an individual that are highly significant in explicating individuals and their interactions.

In the literature review under individuals, it became clear to me that there is good reason why the business literature shies away from conceptualizing individuals. It can become overly complex and ventures over into other fields, such as psychology, sociology and even anthropology. It also becomes clear to me that I had to find a way to identify individuals that exemplified what the data has emphasized. After much reflection, I realized that both the data and literature both highlighted key aspects of individuals. The data focused very much on how people interacted, on experiences, and a combination of needs seen through prioritizing and developing relationships to achieve work success, among other things. The literature explored cognition and interaction and the culmination of this review and analysis presented us with a definition of individuals through the following three basic aspects: experiences, needs and emotions. Based on the context, the data and the literature these three are the most useful and simplistic understanding of individuals and interaction that could be beneficial for not only understanding them but also the context as a whole and moving towards improving collaboration processes.

Together these three aspects have a powerful significance for understanding individuals and their interactions. The literature has identified how experiences guide how we learn to partake of the world but also how we learn to learn (Vygotsky), our needs while contingent on so many other factors have an incredible influence on how individuals prioritize ideas and make decisions. And lastly, emotions, which as the literature revealed individuals react with their emotions much quicker than with rationale, therefore emotions have a great influence on how individuals perceive and interact. The following expands on each one respectively.

11.2.1.1 Experience

Experience is a powerful influencer and teacher. It builds up cognitive mapping and expectations. The network literature from Johansen et al (1994:158) posits four forces for building network relationships one of which is intertemporal dependence that is highly relatable to the concept of experience. Moreover, when we consider Vygotsky's theory of socialization, then experiences become key in how individuals learn and how individuals learn to learn. In other words, how individuals were raised in their formative years will have a large impact on how they experience the world around them as adults. Human beings are adaptive, and the data as well as the literature also address the importance of being adaptable for accepting change and learning from experiences. Even the data specifically address the importance of how experience breeds flexibility. According to a Danish manager, *"Experience makes them [Chinese employees] more flexible. Because it is not the young guys that are like that. Experience in working with foreign companies. There are none of the young assistants that are flexible in their mindset."* (C028)

The above point is further substantiated by an experienced Chinese employee that says, *"But, I think my job is mostly **affected by habit** because I have a long history of work in international companies, so I have a lot of training on the professional way, I mainly not only affected by our culture but also by some international globalization culture"* (C025).

Experience could be considered the hard way of gaining the knowledge one needs to "be more flexible". Perhaps it would be beneficial to both Grundfos as well as the employees to gain access to competencies or tools that can help them better understand why they should be flexible and then perhaps how to do it. Another expat has mentioned creating "habits"; I agree that habits would be a good way for Grundfos to enhance individual's intertemporal dependence and improve collaboration.

11.2.1.2 Needs

Secondly, **needs** as explained in Chapter 11, drive and motivate individuals. Needs refocus how individuals experience phenomena. Needs are also contextual and may change depending on time, and other environmental cues. From the data, we can see a Chinese employee suggests that we focus on other's needs and try to find mutual interests by resolving these instead of focusing on cultural aspects, and by doing so they can elicit trust and establish a working relationship. Essentially, it can be summarized here as individuals create trust through mutual interest by listening, presenting and capturing from what [others are] saying; focusing on *"... what it is that they need."* (C008).

In the Grundfos R&D context, employees need to be very good at networking. Knowing how to network and building their own network are essential. The following three excerpts 1) frame the context, providing boundaries for behavior and 2) show that through interacting with others and building up relationships you can identify your needs and promote your ideas.

*“...I don’t think you will get anything good out of forcing people into it. But when that is said, I also think that we should be pretty **clear** about our **expectations** and the coming work profiles for R&D engineers most of them need to be able to network also. Then some few can be real specialist and don’t think about network but a **big part of the organization needs to be a good networker**.” (DK008)*

“It is extremely important that you build up your own network. You have to find out who in the organization can help me to accomplish my tasks. The stronger you are in building networks the more efficient you will be in the work.” (DK021)

*“...I think that is maybe the way that you even though, you can promote your good ideas in the canteen. You can talk to people over lunch. You can place your seat around people and suddenly you can get more **understanding for your needs**. But that's then difficult when you sit in this office[in China]. Because you are not eating lunch with these guys...that is only when you are in Denmark that you can do that. So, when you are under long distance then it is difficult”. (C029)*

11.2.1.3 Emotions

Lastly, I identify **emotions** as the third way to understand individuals. When we discuss individuals, we cannot dismiss emotions and the powerful nature of these. Emotions have the ability to influence how individuals perceive contextual cues, how they prioritize and what they believe to be a need. While the literature on emotions is expansive, my objective has not been to review it in its entirety as such, however, a keen focus on how individuals and their interactions in this context use emotions if at all. Only thereafter, exploring the literature for tools that can improve how individuals are understood in this context.

While, the data does not specifically mention emotions as such, there are several discussions that reflect the effect and influence of, in this case, *positive emotions, towards developing work relationships*. I have identified the following three excerpts as they emphasize Goleman’s (1998: 82) framework on emotional intelligence that focuses on four very specific aspects 1) self-awareness, 2) social awareness, 3) self-management and 4) relational management, of the dynamic between cognitive and social processes.

The following excerpt originates in an interview with a Chinese employee when we are discussing face-to-face communication. They had mentioned that they preferred it to other approaches of communication. I probed into this and asked, “What is it about meeting the person face-to-face that changes the relationship, for you?”. The following was their reply:

“I think communication is very important but the effectiveness of communication does not only depend on the approach you are using, maybe email, phone call and also face-to-face.

This approach, face-to-face is of course the best one. But the causing is not the approach, the causing I think is how your attitude to communication. Because the effectiveness of communication is, basically depends on how you treat the people. Have you treated people very honestly, very frankly also very friendly with respect and the most you are focused to develop to make those things better, to achieve the best project performance or something else...to let people understand we are doing a good thing is very important. And also you should truly respect and very open for the communication, use your heart, show a very open mind. That's a causing for communication.” (C015)

Using your heart in communication is real and used in practice. Here the Chinese engineer suggests that communication is about one's positive attitude, i.e., emotions and about how we treat others. It is about the focus on making your work better and by definition here through effective communication you build relationships based on being genuine and using respect to communicate. It touches upon all four aspects of the framework, i.e., your attitude, how you treat other people, treating people honestly and with respect and being true to yourself.

The second excerpt is about developing global network relationships through sharing of a meal. Meeting in an informal environment allows for individuals to establish identities, share experiences, articulate needs, identify mutual interests and strengthen mutual bonds. Again illustrating the need for a focus on emotions as posited by Goleman's framework where emotional intelligence aims at striking a balance between personal and social competences.

“It is interesting, there is a big difference when you try to communicate with the members over there [DK] and you have not met them yet compared to when you have been there and you have had dinner and you drink a few beers and you come back. There is a huge difference between the two.” (USA 002)

The last excerpt focuses more on the social competencies presented in Goleman's framework: social awareness and relational management. The excerpt specifically touches upon the usefulness of empathy, reciprocity, building relational bonds, and what I identified in the culture section above, namely, the importance of identifying the balance between needs and relationships.

“It does not matter what culture you come from, it is very important to be able to communicate. It should not just be problem solving communication but rather also when you do not necessarily need the person, ‘how are you doing?’ and such things.” (DK002)

12.4.2 Identifying Two Key Areas for Understanding Individuals in Business

The iterative process between data and theory has exposed the significance of cognition and interaction in understanding network processes. R&D employees have to work on two levels: the internal intellectual capacity (cognition) and the social interactive one (relational) as these most significantly affect job success. Therefore, the following discussion will explore these two aspects respectively.

11.2.1.4 Cognitive Reasoning & the Significance of Perception

When I explored the role of the individual and their interactions two key aspects are revealed: 1) identity and 2) perception, that shed light on the internal and relational reasoning mechanisms for how individuals make sense of their environment. The data also highlighted the role of identity and perception, illustrated by the two excerpts below.

“I believe one should helstøbt⁴³ —be able to show all of you because we make judgments upon many things. Not only based on the roles that one is fulfilling in the short-term but based on the person at all times. It is very important.” (DK010)

*“You always try to **cast yourself to the other**, whatever the other is- whether it is your competitor, whether it is your colleague in a different country, you know.... whether it is, “I am responsible for the globe or I am responsible for North America” you know, you try to put yourself in the other position and imagine what that is like....” (USA001)*

The above excerpts identify how our identity is important for how we see ourselves and how others see us. The first excerpt is a realization that our identity is built up of many different identities. That is how individuals can be many things to many people in different contexts. When working in such a complex environment where individuals and their interactions are so vital for work success and the sustainable development of networks, it is vital that both management and employees both understand the role of individuals and their interactions. This calls for new forms of management and requires employees learn new tools and processes for improving on the working environment.

The second excerpt above from an American manager is the ideal situation for evaluating situations in a complex context. By ‘casting’ yourself onto another you begin to allow yourself an opportunity to be able to understanding where others are coming from. It is this understanding that is the start of finding ways to create common ground, identifying mutual interests that lead towards relational bonds. As the interviewee states, by putting yourself in the other’s position you are better able to imagine what it is like for them as being them instead of understanding their situation being yourself.

Another aspect of the internal cognitive processes is, as the Danish engineer mentioned above, that we use the interactions we share with others as a base for judgment criteria, which helps us make other decisions and other interactions. The following excerpt points out how individuals see things or can be blinded by how they see.

“We have, everyone- all of us- we all have a.... I am going to use words that maybe [are] overly strong but it is only to make a point. We have a geographic and /or cultural prejudice. We all have these. Just by nature; we all grew up somewhere, in some context and learn ways of doing things, ways of communicating and to some extent, we will always believe that those ways ARE the right ways.” (USA001)

The point made in the above excerpt brings up a good point regarding acknowledging personal assumptions that color how we perceive the world and how we interact. It is about self-awareness and awareness of others. The literature reviewed in Chapter 11 also supports these revelations. The

⁴³ Helstøbt is a Danish word that means fully integrated.

prejudice the American Engineer talks about here is also related to the underlying assumptions. These categories individuals use to make sense of the world, it is human being's nature to understand from experiences, however, when these categories are used to understand or judge others they become assumptions. It is an issue as the interviewee alludes to when individuals become bound by these assumptions and/or categories and are not able to adapt to see other perspectives; this causes what I would call *cultural blindness*—the inability to register the existence of other potential ways of viewing things in any given context. This creates a unique situation as the interviewee states where individuals become indignant that their way is the only right way of doing things.

Perceptions create cognitive mapping in the brain which the literature refers to prototypes when prototypes become too narrow to make general assumptions they become stereotypes. This can be a dangerous scenario for a business that is built on individuals and their interactions.

Let us take an example from the data. One of my observations while in R&D DK was the following, *Culture is the problem, let's fix it and move on*. There is this underlying assumption that if management fixed culture and individuals could understand one another by way of national culture then there would be no problems. However, other data as presented in the culture discussion above illustrates that there are many individuals that believe other factors are to be taken into consideration, such as, communication, individuals, relationships and network capabilities, to name a few. The issue facing Grundfos R&D Global Network is not a one dimensional issue but rather a complex 'wicked problem' that is intertwined along with other aspects of the business. Therefore, perceiving there is a simple solution to the internationalization of R&D Networks through the teaching of national culture is naïve.

Perceptions, even shared ones that become stereotypes are counter intuitive towards organizational goals. It is essential for management and employees to understand the significance of their role as individuals and how they perceive their context and share these views with one another as these will undeniably shape their decisions and actions. And as the following excerpts illustrates, it is not so much about cultural differences but rather how we influence others and how we react one another, in essence interaction.

*"How do we want an R&D person to react? I think it is more interesting than focusing on the cultural differences and **how do we influence people to make a change in their way of reacting** but also cultural change is also very very difficult.* (DK021)

Appropriately, this last section will discuss the associative nature of individuals and what the means for better understanding individuals and their interactions as well as for improving collaboration processes.

11.2.1.5 Associative Nature

There is an innate need for individuals to interact; part of this need is practical and part of it is abstract as in the need individuals have to reflect their identity upon others for reassurance and acceptance. In the context of this study, specifically, sustainable work success is likely to be achieved primarily through an inter-dependent co-existence with others. No one individual in the R&D

network possesses all the knowledge needed to develop projects, manufacture, market these, let alone on a global scale.

The following four excerpts further illustrate the significance of why people are important in complex knowledge networks.

The first excerpt, presents the thoughts of a Chinese project manager when asked, 'what would be success, if you can think of one thing, for Grundfos as an organization in China, what would that be'?

"People, the right people; I think, everything, every process by the end is conducted by people. So, if you don't have great people, the right people, it's nothing." (C017)

The second excerpt, presents the thoughts of a Danish expat in China, where they reflect on learning.

"That we as individuals tend to learn better when we see things being done. We have that part, I think, no matter where we come from. A part of that is that we tend to learn better and understand better when we interact. But the networking is a huge part of it." (C028)

The third excerpt, below from a Chinese project manager emphasizes the need to develop relationships and influence others.

"...I think stakeholder management is a very big challenge for me to get success in the Grundfos and for the stakeholder management, the most important is the communication." (C017)

*"For the project manager, you have to figure out what's the different phase of the project—who are the key stakeholder for you, what's their interest and how to get this from out of the project to get them satisfied--so, this quite important and also how to **get their interest** for the project and to make them become **more a contributor to the project**. And this is also the task of the project manager. **We have to get different ways of the communication to make them get interested.**" (C017)*

The fourth excerpt presents the reflections of an American Engineer emphasizes the importance of the associative aspects of interaction.

*"Our organization has challenges, the communication, the willingness to collaborate and build consensus and so on [however] my perspective is that we are a lot farther down that track and some of that really is because, even though it has not always been effective over the years, **we have people that have known each other for a long time. So there is SOME individual levels of relationship, trust and accountability and all those things... I mean, what is the substitute for that.**" (USA001)*

The associative nature of individuals encompasses all three components of collaboration- culture, networks and individuals and their interactions. Individuals in these networks are carriers of knowledge. However, knowledge cannot be downloaded into others. Information, experiences, relationships (contacts) can be shared and thus how individuals interact, how they think of

themselves and others and understand their context is key because how individuals perceive and understand their context is key for how they make choices and take action. The preceding excerpts presented the importance of the associative nature of individuals towards achieving work success in these networks. In this context a focus on long-term, reciprocal, relationships are necessary for network development.

12.4.3 Section Summary- Individuals and their Interactions

This section has been about illustrating the relevance of focusing on individuals and their interactions in business networks such as Grundfos R&D Networks. It is about identifying ways we can understand the role and purpose of the individual in networks; how we make sense of them. This section has expanded upon the two-part definition where on one hand there is a focus on the inter-relationship between perception and identity and where I use three key aspects of individuals: 1) experiences, 2) need and 3) emotions to facilitate the understanding, while on the other hand I use the interrelationship between cognitive and social processes to elaborate on the role of individuals and their interactions. These definitions and explanations are two-fold as well since they help management and employees by providing frames for understanding both intra- and interpersonal dynamics of interactions.

12.5 Context & Its Relevancy towards Improving Collaboration

Culture has such a profound influence on how we understand one another, how we make assumptions, perceive situations and attribute characteristics, ultimately affecting the decisions we make and the actions we take. Culture becomes interwoven into the fabric of our context and we have a tendency of taking it for granted. However, the context, our surroundings is influenced by much more than just culture, especially when culture can and is so many things to so many. In Chapter 11, I came to the realization that in the context of this study, individuals could be understood through three main and basic factors: 1) experiences, 2) needs and 3) emotions. How individuals navigate their context, understand it and respond to it creates ripple effects in the environment. Becoming aware of the varying layers of contexts, identifying roles and influence in these and reflecting how to improve these individually can to great lengths improve the overall environment for all participants. There is a necessity for both organizations as well as employees to recognize their role in taking up a responsibility for improving collaboration—by placing a greater emphasis on context.

Context is not focused on a specific culture or level of culture. Context casts a wider net and by definition context explores, “the circumstances that form the setting for an event, statement, or idea, and in terms of which it can be fully understood” (Oxford Dictionary) (which can include but are not limited to just culture). It is invariably the context that sets the parameters for how we make sense of our environment. Therefore, first and foremost, we should consider the context of the organization, only then can we begin to narrow down what aspects of culture that are pertinent and why and how culture is and should be understood in this context. The exploration of emerging concepts in the literature revealed culture in organizations is influenced by three main aspects of the organizational context, such as 1) the interest of the founder, 2) the boundaries set by the organization as well as those set by network members, whether perceived or otherwise and 3) a metaphor for understanding the innate drive of an organization to want to have, create and maintain order, in other words ‘the organizing metaphor’.

By focusing first on the organization (instead of culture), it becomes rather clear that the context influences how we perceive and what we choose to perceive. In the context of this study's case company, Grundfos, and companies like it, traditional culture theories are limited in their usefulness. Organizational culture is distinctly different than the cultures of different countries, i.e., national culture, in that organizational culture is created; it originates in the interest, design and vision of the founder(s) of said organization. The founder effect can have lasting effects and continue to influence the organization long past the time of the founder. Likewise, the boundaries of the organization and its members whether real or perceived also have a great influence on how the culture develops over time. Lastly, the 'organizing metaphor'⁴⁴ aspires to the effective and efficiency of goal acquisition and strategic success for organizations. These three main aspects of the organizational context make the difference in terms of how individuals understand culture, more specifically, how we explore culture in organizations.

The above three aspects of organizational context present the distinction between culture and culture in organizations as such, ultimately leading towards a change in mindset and understanding of a concept that has been so very difficult to comprehend. For several years now the culture and business literature alike has seen many critiques of Hofstede as well as other functionalistic interpretations of culture that use cultural dimensions and categorizations of national culture traits to make sense of culture. My point here is not to dissect these scholars' work, however, perhaps, to begin the next wave of understanding culture that is applicable for the context of complex organizations such as the case company, now and in the future.

We have a whole other set of challenges in the world economy and the vast advances in connectivity provide us with an opportunity to create tools that not only apply and are useful but that also make sense in the field of business and in the context of knowledge networks. The remainder of this section will consider the contextual understanding both in general and specific for the case company, respectively, for understanding and improving collaboration in intra-organizational, multi-cultural knowledge networks. These discussions about context are presented in order to provide perspective to create an understanding, a frame if you will for understanding the situation in order to analyze it and propose sustainable solutions for Grundfos and other organizations with similar contexts.

12.5.1 Understanding the Context of Global R&D Networks

When exploring intra-organizational, multi-cultural knowledge networks there are several aspects of the context that become apparent when you begin to investigate and observe. Based on the data, below I present nine of these characteristics and begin to establish the connection between these and the three significant components for improving collaboration.

1. Long-term focused
2. Knowledge network mindset (network members have an explicit awareness that working together will produce a greater output, therefore sharing and working together is essential).
3. Invested interest (reciprocity (benevolent/greater good philosophy), mutual orientation, mutual interests
4. Importance of continuous interaction

⁴⁴ For more information on the 'organizing metaphor' please see Sackmann (1997)

-
5. Importance of developing relationships based on interests and interactions
 6. Focus on the balance and symbiosis of needs and relationship
 7. Understanding culture through the individual
 8. Understanding the self both cognitively and socially – self-awareness of identity and behavior and interpretation or understanding of said behavior.
 9. Real but more negative aspects of this context
 - Influence
 - Reputation

Understanding the underpinning characteristics of the context will make way for understanding how to best work in such a context. First, the purpose of intra-organizational knowledge networks is to reduce waste and create better solutions by working together. This can be achieved through sharing information, experiences and ‘knowledge’ in order to create better solutions together. There is research that shows how large organizations have problems when business segments have traditionally competed and duplicated efforts (also called silos). Working across business segments and functions, e.g., including sales professionals at the development phases or engineers when identifying and outlining customer needs can reduce overlap and catches issues at the frontend. Global R&D networks strive to do just this while being close to important markets.

Given the purpose of the context, there should be a predisposition towards working together and sharing information, experiences, etc., however, the multi-cultural aspects of these networks causes difficulties towards basic communication and deeper aspects such as understanding one another and being able to develop trust. Both data and the literature reviewed under Chapter 10 illustrated how important it is for individuals in this context to have opportunities for face-to-face interaction, since the distance can have a significant impact understanding others, which affects, building relationships and developing trust.

Given my stance on networks as constructed by individuals⁴⁵, here too it becomes important to understand the individuals as part of the context. The individuals that work in this environment have been referred to in the literature as knowledge workers, which means:

“Knowledge workers are a rapidly growing sector of the global labor force (Silvestri & Lukasiewicz, 1991). Their work is open-ended, creative, individually styled, and cannot be standardized or fully planned out in advance (Bell 1973). Thus tasks and responsibilities cannot be cleanly divided up amongst individuals ahead of time.

Knowledge work consists of complex, analytic, and abstract processing of information and knowledge (Barley & Orr, 1997; Savage, 1990; Stehr, 1994; Zuboff, 1988) raising the constant possibility of mismatches between the division of roles and the division of skills and knowledge.

As a result, knowledge work is highly interdependent, with individuals frequently consulting each other and exchanging information about their tasks.

⁴⁵ Please see section 10.9.1.

*In such circumstances the **help of others is needed by individuals to make progress on their own work**; helping is needed within groups to ensure that outputs produced by one person are consistent with inputs required by another; and helping is needed within organizations for efficiency, flexibility, learning, and innovation (see, e.g., Malone & Rockart, 1991; Nickerson, 1992; Sproull & Kiesler, 1991; Walton, 1989).“ (Perlow and Weeks 2002: 346)*

Overall, the individuals participating in these networks exhibit a great deal of autonomy in the work they do, they have to be critical thinkers and be able to find the resources they need in order to complete their tasks. Given the type of work, working style, the context is pre-defined to have a sense of longevity due to interdependency; in other words, while the task or project may come to a close the individuals have gained experiences of working together, creating memories and building reputations and relationships. This is what the literature refers to as ‘know-who’.

Given the context and the purpose for this web of human interaction it is important for management as well as employees to identify areas of mutual interest or mutual orientation. Once these have been identified the data also shows that it is important to nurture relationships through continuous (purposeful and genuine) interactions as these help to further develop established relationships, help confirm reputation and strengthen original bonds made; the data has revealed these relationships are essential towards building strong networks—people you can rely upon and contact for different reasons.

Some of the characteristics outlined above may not be entirely explicit when working in this context and this ambiguity about what to expect in such an environment can easily lead to frustrations when working towards task completion.

Moreover, some of these characteristics work well together while others may be counter-productive. In an environment that is highly influenced by projects, project teams, matrix structures, by autonomy, identifying mutual points of interest and caring about the long-term aspects of interactions may seem like a waste of time. Yet, based on my understanding of the data collected I believe that some of these knowledge workers are not fully aware of the significance of their roles and reputation. Perhaps they are and do not know how to affect change for themselves. I believe this is one way that management can be more explicit for employees on a global scale on how to tackle understanding a multi-national complex organization, like the case company, Grundfos and their Global Grundfos R&D Network.

Lastly, based on this study there are some characteristics that I believe would improve the contextual understanding—level the playing field for knowledge workers, these will be presented in PART III as part of the discussion before the suggestions. From the above discussion it becomes clear that culture, how it is perceived, networks, how they are used and by whom, for what ends, and the very individuals and how they interact become extremely significant towards improving collaboration.

12.5.2 Understanding the Grundfos Specific Context

Reframing our understanding of culture in organizations by way of understanding the organizational context is a challenging proposition. However, as stated above context is much more than culture

and when we focus only on culture we become limited in the way we can explore the context, only focusing on just one aspect of the bigger picture. For clarity I will again present the definition of context as per the Oxford dictionary—

Context:

The circumstances that form the setting for an event, statement, or idea, and in terms of which it can be fully understood.

Exploring the context will show us a variety of manifestations that are integral towards our understanding of the phenomena. Since the key distinction between culture as such and culture in organizations was already identified above, I will use those three aspects of the organizational context: founder effect, boundaries, and organizing metaphor, as a framework to analyze the context of the case company, Grundfos below and to show how these contextual aspects relate to the three significant components towards improving collaboration are understood/misunderstood.

As presented in the introduction and case presentation, Grundfos is a successful manufacturing company situated in Jutland, Denmark. In its more than 70 years in operation, Grundfos has expanded to over 45 countries, making its presence known throughout the world. However, current and projected future expectations in business have suggested the need to be close to market not just from a manufacturing, sales and after-sales perspective but also from an R&D perspective; being close to the market, scouting local talent and developing and maintaining relationships in key markets with local businesses, universities and government organizations can facilitate a deeper understanding of how to develop innovative solutions. Ideally, each R&D unit around the world should be able to work together so as to create efficiencies in general work processes and have the opportunity for combining projects (products and solutions) that can be marketable in other parts of the world and unite experience, information to create innovative solutions.

The context thus becomes one of exploring how to best work together across time, space and culture, in other words, how do we improve collaboration across what can be seen as a global R&D network. For general clarification purposes, this “Global R&D Network” is what I have referred to throughout the study as intra-organizational, multi-cultural knowledge networks.

Grundfos' context based on the three distinctive aspects of organizations.

As explained above there are three basic yet fundamental aspects that are distinctive of organizational contexts and are what ultimately help to create an organization's culture—these are 1) founder effect, 2) boundaries and 3) organizing metaphor. The following discussion will elaborate on the context of Grundfos using these three organizational aspects as a frame for understanding the context.

Founder effect

As described in Chapter 9, the founder effect is created out of the interest and/purpose for the organization's existence and how these interests, values and norms guide and mold the business over time.

When exploring Grundfos for manifestations of the founder effect, we can identify that it is steeped in its origins as a family-based company and its traditional focus on innovation. Hard-work,

dedication, investment in the organization, in one another (employees), in society and the future, these have been synonymous with Grundfos and its founder's influence. The original influences that linger throughout the organization as well as those passed down through time affect expectations and actions. So, although, one could attribute the founder effect to Danish cultural traits, that would be limiting all other possible influences that stem from the founder effect. In exploring Grundfos for manifestations of the founder effect I have identified, the values and the motto, Be, Think, Innovate, presented in the case presentation to be illustrative of the influence of the founder. In the book, 'Grundfos more than pumps', there is a rich background presented of Poul Due Jensen, the founder. Many of the descriptions and explanations of who he was are still palpable today.

Still today the founder effect has a strong presence at Grundfos. While the company has grown from its humble beginnings, the family has an influential role in its development with the Poul Due Jensen family sitting on the board of directors and controlling 12% (according to sustainability report 2006).

However, since the company has grown outside of Denmark there is an observable geographic distinction; the farther away we move from Bjerringbro, Denmark (headquarters), the more focus there is on the present, the local market and the future and the less focus on the history. While, too much focus on the history and its deep roots can hinder the desire to focus on globalization in the everyday work, there is a strong focus on the values that remain strong across both R&D units explored under this study. These values such as those presented in the value wheel: sustainability, thinking globally, open and trustworthy, partnership, leadership, independence, responsibility and people in focus, are indicative of the values that guided Poul Due Jensen in his efforts nearly 60 years ago.

As illustrated above core values still drive Grundfos today, however, when organizations become so large it is difficult to explicitly interpret overall company strategy on a regional, functional, local level where it makes sense for every day processes. How do we align local, regional, national and global initiatives, especially when part of the R&D culture is governed by autonomy, informal relationships, influence, "breaking the rules" and thinking of "what's in it for me?" which are indeed counterintuitive to the overall Grundfos values. The founder effect is significant for understanding the organizational context because it allows us to understand the origins, and gain an overall understanding of where we started, where we have been and where we want to go. Based on the data collection I can also see the barriers between the ideal, the actual and the aspired to, giving us an opportunity to improve collaboration and pave the way for success.

The founder(s) affect the organizational style, tone and overall culture that initially develops, setting the tone for how business should be conducted. Therefore, the founder effect shapes the context and has an overall effect on the organizational culture, its structure, i.e., networks and its people and how they interaction—all significant components towards improving collaboration.

Boundaries

Boundaries are identified as parameters that contain or hold certain expectations. In a large complex hybrid organization such as Grundfos, where there exists simultaneous matrices, networks—both formal and informal, as well as meritocratic organizational structures, boundaries may not be easy to decipher. While some boundaries are formally outlined by management others are created through interactions and others are only perceived to be as such, however, they become real since they are

responsible for influencing, perception, opinion and action. In the case of Grundfos I would refer to these boundaries as layers giving them a three-dimensional aspect to them, since some networks overlap with regards to priorities, influence and overall initiatives. This is reminiscent of what Weber and Khademian (2008:336-7) termed '**wicked problems**' as those problems that are **"difficult to define, with vertical and horizontal cross-cutting dimensions, multiple stakeholders, close connectedness with other problems, trade-offs between values and a relentless quality"**.

An ideal example of this complexity resides in what Grundfos means to different people or how different stakeholders perceive Grundfos—whether it is a Danish monolithic player in the international market or a global company with Danish roots. Some may say it is a matter of semantics or that it is nonsensical to spend time discussing such matters, however, much of the issues I have uncovered in this case study deal with the need to clarify boundaries through perceptions, purpose and intent and match the intent with actions.

There are more layers that I care to identify here, however there are three specific boundaries, layers that affect the context and understanding of Grundfos for collaboration.

In the introduction of this dissertation in Chapter 1 section 1.3 Critical Points-letting the data speak I present several aspects of the context that now make sense towards how influential they are for improving collaboration and creating a more explicit understanding of the context. I will not repeat what has been written but rather identify and summarize those that are most significant/relevant from that section (see page 7-10):

- The Perception of culture and subsequent usage of culture in practice
- Globalization
- The importance of building relationships
- Language and Communication
- Headquarters

There are two contextual themes that develop from the above phenomena. First, is the dichotomy between Grundfos R&D Denmark as an equal part of the Global R&D Network vs. R&D as part of Grundfos Headquarters and secondly, is the importance of people and their interactions towards understanding, interaction, developing relationships and collaborating. These aspects of the context imply boundaries (or rather barriers) between Bjerringbro past, present, future, between Danish senior employees that have an established network what they referred to as a "historic network" (page 24 under Network theme for R&D Denmark) and Grundfos' global aspirations and how to include all in an understanding of these ambitions in a more explicit manner.

On a less macro scale there are boundaries even within R&D units but these are related to the Engineering culture and less a result of the internationalization of R&D activities, in other words, boundaries such as expertise, tenure and status due to roles and influence are a general aspect of any R&D setting with local or multi-national.

Organizing Metaphor

The organizing metaphor is representative of a natural phenomenon found in organizations and that is the need to reduce waste, increase productivity and improve performance, in other words, it is the need to be efficient.

The business of Grundfos is founded on a pursuit for developing innovative solutions, with such a focus the context is organized through networks, matrix structures and by functions and projects as mentioned above under boundaries; with a focus being turned towards the autonomous individual interacting and working together. Both projects and networks stand out as the primary way in which individuals in Grundfos R&D organize. They also organize around geographical locations, however, the most interesting groupings are those created through shared (positive) experience (projects) and/or common interests (networks). I find it relevant to mention that there is a third type of method of organizing that originates at the individual level and that is the phenomena discovered in the data known as, “what’s in it for me?”. Interest, influence, relationships, and status have a great impact on how individuals interact in this environment. This results in a greater focus on individuals and their interactions and making sure that management is doing what they can to improve processes and that individuals fully understand their context in order to work at their most efficient potential.

12.5.3 Section Summary

In the context of this study, which is intra-organizational, multi-national knowledge networks, there are six contextual elements that have emerged that affect how individuals understand and interact in intra-organizational multi-national knowledge networks, particularly those in Grundfos R&D: 1) networks, 2) significance of the individual and their interactions, 3) culture, 4) relationships, 5) perception and 6) trust. Interestingly, the six contextual elements are either one of the three components for improving collaboration, part of the inter-relationships between these components or a significant theme arrived through the data collection. Moreover, these components and concepts are in line with the four major arguments that emphasize the need for networking with a focus on individuals and their interactions presented by Tidd and Bessant (2009:283) (please see Chapter 8, section 4 of this dissertation) under the review of the literature on the internationalization of R&D activities.

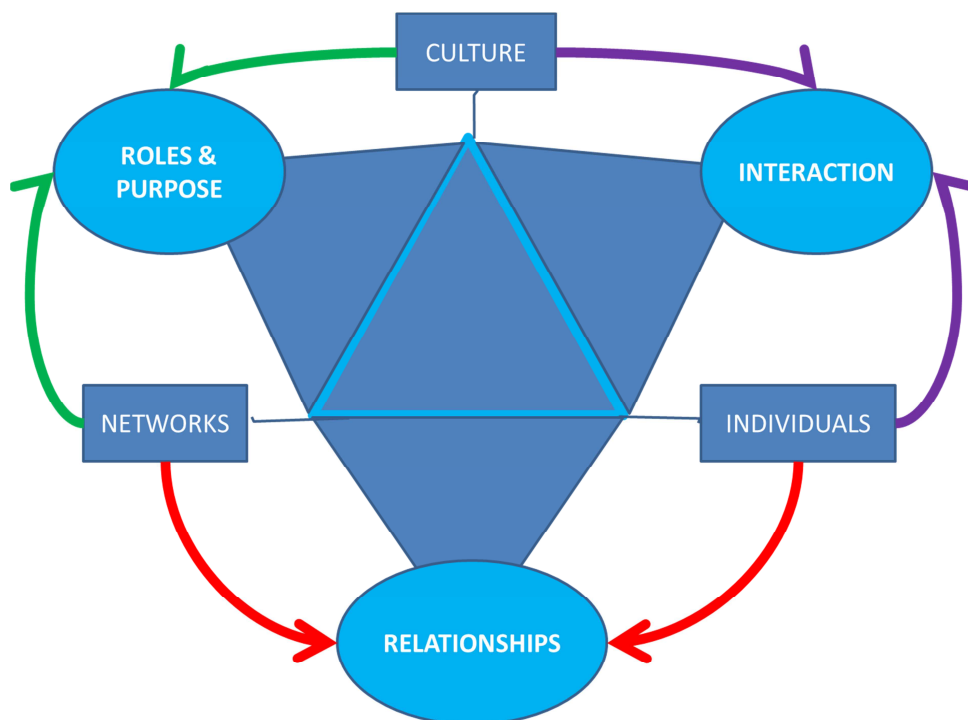
The data in this study has continually addressed the importance of the context, exemplifying what the theory called “wicked problems”, this intertwining and complex contingency of issues. I realized through the study’s development the importance of context in understanding and action. This discussion on context is important to the analysis for two main reasons. First, it provides the reader with a first-hand experience of the setting, as close to real life as possible. Secondly, I find that understanding the context, the circumstances allows for understanding of the analysis. It is more than just culture and I believe that if I would include it under the culture section the distinction between the two would not be adequately made. This way I am able to highlight important aspects of both components as they are both highly relevant for improving collaboration in this setting but also in similar settings as well.

PART TWO-AN EXAMINATION OF THE COMPONENTS’ INTER-RELATIONSHIPS

The data revealed the three most significant components for collaboration to be the concept of culture, that of networks and that of individuals and their interactions. Through the journey of this study the iterative process has further revealed to me the inter-relational aspects of these concepts,

manifested of course through the collected and interpreted data. The following figure will further explain the components' inter-linking concepts and why these are critical for understanding and improving collaboration processes of knowledge networks (or any network that profits on the long-term investment of network members of one another). The idea here is that these networks are guided by the philosophy that when individuals share their knowledge, experience and information individuals are able to create something better. After the brief explanation of the model below I will address each of the inter-linking concepts revealed by the data, elaborating with examples from the data and theory.

Figure 57- Inter-relational aspects of Collaboration



The above figure is an extension and development of the original figure presented in chapter 4. Here the focus is on the components' inter-relationships and how these impact improving collaboration; and what new insights we can learn from these conceptual configurations. In PART I the three most significant components of collaborations processes were explored for the Grundfos Global R&D Network. Now, the reflections and revelations from PART I have been explored to further understand how individuals can best collaborate in complex settings such as these. I have identified the inter-relationships as such; these will be further expanded upon below, respectively:

- Culture & Individuals exposes and emphasizes **Interaction**
- Culture & Networks exposes and emphasizes **Roles & Purpose**
- Networks & Individuals exposes and emphasizes **Relationships**

Throughout each discussion I will use one of the phenomena captured in R&D Networks, namely, the ‘*What’s in it for me?*’ phenomenon⁴⁶ to explain the inter-relationships. This phenomenon is representative of the type of network structure present in Grundfos R&D networks, where relationships both formal and informal, meld at times, creating a complex environment where relational bonds, intertemporal dependence, as well as the experience, needs and emotions of individuals play a role in perception and interaction. This phenomenon is complex since it is both beneficial as well as unfavorable for network relationships, is a great way to exemplify the inter-relationships stems from the autonomous nature of the context but can simultaneously negatively affect the need for inter-dependence.

Identifying the Inter-liking Concepts

12.6 Interaction: Culture & Individuals

In identifying the three most significant components towards collaboration the data revealed that understanding individuals and their interactions is an essential aspect of improving collaboration processes. Further analysis of the data revealed that link between culture and individuals *is* interaction.

In the networks chapter under the culture approach I refer to how the cultural approach focuses on how every individual action is subject to interpretation, framing, social comparison and other processes that enable the individual to derive meaning for any given action. The aim should not be for individuals to be able to see every possible cue in their environment rather it is the taken for granted process that needs to be explored anew—the enacted environment, rather than a specific national culture. This is the essence of culture; this is how we can begin to understand culture and individuals—through interaction.

We must also remember the context of this study is intra-organizational, multi-national knowledge networks that focus on creating knowledge based on the sharing and exchanges amongst network members, the idea that $1 + 1 = 3$ applies here. The need to work together has been clearly stated in the data. For example, the excerpt below from a Danish manager with over 20 years of Grundfos experience identifies the need for individuals in this context to share.

“I have also experienced people that come to Grundfos from other organization that are overwhelmed at how much we are willing to share our knowledge. And in other organizations people say that my knowledge is my value. And if you can simply put it, I think you can say there is a good understanding that survival is not contingent upon protecting your knowledge but rather in developing it and you do this by sharing it with others.” (DK010)

In PART I of this chapter I discuss the importance of the individual (section 12.3), I also cited data that emphasized the importance of the individual and how one excerpt insightfully states, *“knowledge is carried amongst people”* (C028).

The analysis of culture revealed that culture in this context of this study is enacted through interaction. Culture has been used to identify and organize individual’s traits, however, the issue

⁴⁶ For more on the ‘*what’s in it for me?*’ phenomenon please refer to sections 4.3, 6.62, 6.7.3 and 7.1.3.

that I have identified is that individuals are not one-dimensional, as evidenced by the data and literature, individuals epitomize multiple identities that make up the whole. Additionally, there are many 'associative tiles', when considering the theory on Cultural Mosaics presented by Chao and Moon (2005) in Chapter 9, that individuals can use to understand others as well as express themselves. In addition to an individual's identities, and associative tiles, the context of the given situation as well as their experiences, needs and emotions and how they see the world around them (perception), will influence interaction. Therefore, interaction is the best way to understand individuals and culture. As I stated in the beginning of the analysis, in this context traditional national culture theories serve to limit the way we understand and relate to individuals, i.e., Americans are not all extroverts, Danes are not all egalitarian and Cubans are not all expert Salsa dancers.

This study has further revealed some key aspects of interaction in networks

- The development of mutual orientation is necessary
- The frequency of encounters where the outcome is positive will pave the way towards more frequent and perhaps deeper interaction
- Opportunity for participation as well as willing participants is also necessary
- Adaptability is necessary in negotiating meaning creation, developing and evaluating relationships
- Giving and receiving of information is necessary (Access and willingness to share)

Positive interaction experiences that aim for mutual orientation provide individuals with reinforcement of their self-view, compliments their interests, identities, among other self-characteristics, creates synergetic effects and allows for reciprocity.

So it is through interaction that we understand individuals and their culture(s). From a managerial perspective, it is about creating meaningful and purpose-driven opportunities for interaction and the development of mutual interests. Based on the analysis of the network component in PART I, identifying the purpose of network life and an individual's role in it is essential for work success. If networks are built on the interactions of individuals and if culture is enacted through interaction, if relational proximity reduces the influence of physical proximity has on these types of networks, then it would behoove managers to develop forums for meaningful and purpose-driven interaction. And what is that? It is interaction that follows the ambitions of the organization, motivates and inspires employees to want to share their experiences, and further develop their skills, competencies and knowledge.

From an individual or employee perspective, it is about developing intra- and inter-personal awareness such as what I presented in PART I under the analysis of the culture component (12.1)—exploring identity and perception within the individual and exploring the symbiosis between needs and relationships and lastly exploring practical manifestations of culture through very basic aspects of our interactions such as how we communicate and how we learn. Moreover, we can review Chapter 11 where I cover four different social process techniques for improving cognitive and social awareness. Lastly, we can consider Goleman's framework on emotional intelligence where he explores, personal and social competence via regulation and recognition of the self as an individual and as a part of the social context.

The importance of individuals and their interactions is permeable in Grundfos R&D. Highly driven by networks both formal and informal and an overly complicated matrix structure that takes quite some time to fully grasp. If we explore interaction through the '*What's in it for me?*' phenomenon once again the data places emphasis on the importance of individuals in these networks. However, one of the disadvantages is that this mentality leans more towards individual interest instead of the development of mutual orientation and reciprocity that as presented in [PART I](#) of this analysis are essential in developing relationships. The second aspect of this phenomenon is that it is a cultural manifestation of the R&D Denmark unit and does not translate into the Global R&D network, yet still predicates this context with how R&D Denmark engineers respond towards, for example, being global mentors as well as participating in Competency Networks and spending time in other R&D units abroad.

Interaction fosters opportunity to create strong relational bonds (why strong? It is a metaphor; strong relationships are good relationships because they are sustained by the relationship binders, e.g., things such as co-created experiences, trust built through mutual dependency on delivering of information, contacts, sharing tacit knowledge, for example). Through interaction individuals have an opportunity to share their interests, learn of common interests, share their experiences, and share their knowledge through story-telling and narratives and learn from one another.

12.7 Roles & Purpose: Culture & Networks

Through the course of this study and deep exploration of the concept of culture the analysis revealed that both culture in organizations as well as network structures need roles and purpose to facilitate smoother work processes for individuals.

The review on culture in organizations revealed the stark difference between culture in organizations specifically focusing on the what I call *the interaction level*, in other words, where individuals come together, be it two people talking over their morning coffee or a group meeting (as opposed to culture as such typically understood as National Culture) should first and foremost have an emphasis on the organizations' context, which sets the tone for the organization's present actions and future ambitions. The literature reviewed in Chapter 9 revealed three defining aspects of culture in organizations: the founder effect, boundaries and the organizing metaphor. These three distinctive aspects of organizations provide roles and set the overall purpose of the organization and of its culture.

This study has further revealed that the concept of culture is used as an identifier and organizer of people. Organizations have focused on and use national culture theories that categorize in order to manage the organizational environment. The tendency has been to focus on culture as being able to solve inter-personal dynamics with the following thinking: 'If individuals understand the National cultural differences that separate one another then they will be better able to work together'. However, as this study has revealed culture is not a managerial tool as such and individuals are too complex to be placed into national culture categories; their identities are too multi-faceted for such a limitation. The literature reviewed under culture also exposed how sub-cultures within the organization emerge as a way for individuals to try to gain some control of their environment when they cannot find other existing ways of identifying with the present environment.

When discussing the concept of Networks in this study, the literature reviewed in Chapter 10 as well as the discussions in PART I of this analysis have revealed that shared-context is necessary for sustainable network success as it creates a link between people. Moreover, the importance of context is also emphasized by the focus on boundaries, roles, expectations. Lastly, the importance of individuals and their interactions in networks also revealed the following four key purposes of networks: 1) achieve work goals, 2) gain access to information, 3) develop relationships and 4) participate in network activities; these emphasize the role of individuals in networks.

In PART I of this analysis both the culture section as well as the network section discussed the importance of roles and purpose for achieving task completion and developing relationships within the network. PART I also explored the context of these networks and also identified the importance of roles and purpose in these networks. Both networks and culture need frames of reference, but these frames, cannot be limiting ones. Both networks and culture need to identify and use roles for successful interactions, communication and collaboration. Both networks and culture in organizations need to understand the underlying purpose so as to be able to frame their context; make sense of their environment. Instead of basing these on national culture characteristics, these frames should originate from 1) organizational context and 2) individuals in interaction.

As noted above the R&D network members' focus on their needs illustrated through the '*What's in it for me?*' phenomenon emphasizing the need for re-identifying the roles and purpose for the Grundfos R&D Network in its entirety. The complexity of the networks can be reduced through the propositions from PART I of this analysis, specifically under the Network component discussion, e.g., redefining the **role** of network participants to knowledge workers. The data points to the evolution of the role of the knowledge worker in this case engineers, project managers, etc. that due to the changing needs of organizations to want to deliver sustainable solutions and the changing business environment such as with globalization, knowledge workers need to be more autonomous, taking up a more leadership and self-management role. This means that they need to understand organizational objectives, those very abstract overall strategic plans and operationalize them in order to achieve success. This discussion inevitably leads to a focus on the actual relationships that individuals need to develop in order to achieve work success. As PART I also noted under the discussion of the network component, building trust through, for example, the establishment of competence credibility is one way to operationalize purpose through action. The last section expands on the inter-relationship between network and individual through relationships.

12.8 Relationships: Networks & Individuals

The third inter-link identified is the one between Networks and Individuals. Networks need individuals and individuals in this context, create network structures to be able to achieve work success. However, that is not the only thing that is developed. Over time and through experiences, individuals in these structures develop relationships. These relationships are a key aspect of network life. The following two excerpts illustrate the significance of relationships. The first excerpt highlights the need for human connections in communicating at work also pointing out that it is about communicating and not what (national) culture you come from. The second excerpt pinpoints the difference between developing internal vs. external relationships and the importance of internal relationships to be long-lasting.

“It does not matter what culture you come from, it is very important to be able to communicate. It should not just be problem solving communication but rather also when you do not necessarily need the person, ‘how are you doing?’ and such things.” (DK002)

*“You’re trying to build up, if it’s with the external partners and it’s at the early stage, which is browsing around, trying to find out, who can do what and where could we have interest in common. **There’s not that much weight put on the relationship. But it is a different thing, when you’re trying to build up relations in the company, long lasting hopefully.**” (DK012)*

The above excerpts are just two of a multitude of reflections and considerations Grundfos employees have expressed regarding work and the importance of relationships. I choose these two because they specifically place emphasis on the relational aspect of work and the internal and long-term focus of these networks.

The literature reviewed under Chapter 10 Network, walks us from the trends and tendencies in the extant literature towards a more relevant understanding of networks for this context and others like it. And what should be clear after reading that review is that networks are contingent on the individuals that use them. This reminds me of Callon’s distinction between human actors in the networks and non-human actors, where networks in of themselves are empowered as if they alone, these structures, can do and undo, processes, activities, action plans, relationships, etc. Networks cannot be blamed for an organization’s failure or success. It is therefore important to focus on the individual and their interactions within these networks it is the human actors that give ‘life’ to non-human actors.

Interestingly enough, when we consider networks and individuals in this type of structure the inter-linking characteristic that is quite relevant is the need for autonomy. However, when we also consider individuals in this context, I think of the great need for inter-dependence. This is the figurative yin and yang of network structures, *autonomy and inter-dependence*.

The importance of relationships as the significant link between networks and individuals is specific to complex intra-organizational knowledge networks, where the long-term focus and inter-dependence is necessary for work success. The data in all three R&D units has spoken about the importance of individuals to work together to achieve work success. The need for relationships to get started in the organization, to gain access to information and others that can aid in work success. The data has also spoken about the need to *build trust* with one another instead of focusing on cultural differences. This focus on trust for working together is exemplified in the excerpt presented in the above discussion on interaction. The excerpt identifies the need for individuals to share expertise, information and their knowledge. What I found quite interesting in this study that in order to share (of course there is an implied understanding here that the exchange is of value and not just easily accessible information) individuals need to feel/believe they are not being taken advantage of; there needs to exist some level or form of trust. Individuals working in these networks, need to believe that they can work in an environment where trust exists. The lack of trust in itself can inhibit the desire to interact much less establish relationships.

The data and its analysis revealed that both individual professional development and network success are linked through a combination of relationship development. This is achieved through

successful participation (peer-evaluated) that provides value in the form of credibility and influence, which grants access to information through the building of relationships and the formation of trust.

Without the relationships between individuals across the networks in Grundfos R&D, the work would be limited in its reach and robotic in its approach. Relationships provide mutual orientation, co-creating experiences, inter-temporal inter-dependence, most importantly according to the data, relationships provide bonds. These relational bonds pave the way for better working relationships. Relationships are not the destination, it is about the journey and therefore, relational bonds are not the end all be all of improving collaboration processes. In acknowledging relationships as an important link between network structures and the individuals that participate in these structures, this realization provides managers and employees opportunities for fine tuning how individuals work together.

The next step is how to improve current relationships, how to equip individuals to develop and maintain relationships in a sustainable and genuine way. The next steps are about preparing management and equipping employees for how to manage their network relationships, and develop inter and intra-personal skills to be better prepared for this context.

In PART II of Chapter 12, I review the learnings from PART I of Chapter 12 placing emphasis on the importance of relationships for individuals. I wrote, “Relationships provide us the opportunity to share resources more freely, to learn from one another more openly, and to receive external affirmation/validation that strengthens one’s own self-perception/identity”. In other words, individuals need to interact in order to make sense of environment and they make sense of their knowledge, their understanding, through interacting. Relationships, take the interaction a step further, this is where trust is formed, in the vulnerability of trusting others, and this is how relationships are strengthened, through an affirmation of renewed accountability and reciprocity.

How does the phenomenon, “*what’s in it for me?*”, affect networks and individuals? How does it affect relationships?

Due to the autonomous nature of network structures there are many activities, projects, events and meetings happening at the same time. Individuals need to prioritize what they commit their time and energy to in such an environment. Therefore, it is clear when observing network members they have to be selective and evaluate what they get for investing their time and energy in certain activities. While, it may seem a healthy way to maintain an overview of the purpose and roles individuals commit to and invest in, there can also exist some negative repercussions for networks and individuals alike. For example, individuals need to understand from the onset what they are committing/ investing into and this may not always be possible. One disadvantage may be caused if one is excusing oneself one too many times from different activities may influence how others see you; one’s accountability and possibly ones credibility. Networks can also be negatively affected by an individual’s change of heart in committing to different activities, simply put, if there is not enough interest, support behind an initiative it will not have the momentum to proceed. Lastly, if we consider how this phenomenon affects relationships, it becomes clear for me that an individual’s closest relationships take precedence over others. The issue here, is that the Grundfos R&D network is at a point in its development where individuals, particularly those that have established, historic networks need to open up to allow for new “close” connections to be established. This highlights the

concept of physical vs. relationship proximity and how many of the individuals that have historic networks are located in R&D DK, opening up for the “out of sight, out of mind” phenomenon⁴⁷ also revealed in the data collection.

The problem is that up until now the literature on networks really does not delve into the what or how of developing meaningful, necessary network relationships. Through this study, I have identified that one needs credibility. In exploring the concept of networks and individuals the data revealed that relationships play a significant role in how individuals use networks. The three interlinking concepts: interaction, roles and purpose and relationships all work together to facilitate how networks should be used by individuals and how individuals understand their context as well as the one another all for the improvement of collaboration.

⁴⁷ In such big networks units become like silos (in other words their views in practice are focused on their unit and it is difficult for them to see the bigger picture and how the networks can be global and multi-dimensional in scope) and this creates an out of sight, out of mind phenomena. In other words, individuals in one unit get involved (as they should) in their own work and the down side is that they “forget” of the others, focusing on their priorities diminishes the opportunity to focus on others in ‘distant’ places.

PART THREE- IMPLICATIONS, RAMIFICATIONS AND PRACTICAL APPLICATIONS

PART I and II further developed the most significant and relevant components, themes and concepts presented throughout this study. PART I and II also began to describe how both management and employees could improve collaboration process. PART III brings the analysis to a close through bridging both PART I and PART II through two sections, **Discussion** and **Suggestions**. The first section discusses implications and ramifications of this study for the improvement of collaboration and the management of R&D activities in a global setting. The three components identified as most significant for the improvement of collaboration—*culture, networks and individuals and their interactions*, as well as their inter-linking components—*interaction, roles & purpose and relationships*—are discussed alongside the greater *context* and *complexity* of Grundfos R&D. The aim of the discussion is to bring closure to the analysis by discussing the practical nature of these findings and re-conceptualizations analyzed in PART I and II of this chapter. These considerations and discussion leads to the second and last section that presents organizational suggestions for Grundfos R&D based on this study.

12.9 Discussion- Context, Complexity, Culture & Cognition

Current Situation & Barriers-reflections for greater awareness

Grundfos is at a crossroads with the internationalization of their R&D activities. Transformational change begins first with a change of mindset; understanding that whatever is currently the case is no longer satisfactory or sufficient. Obtaining a deep understanding of the contextual cues can aid in transforming perspectives that can more smoothly lead towards relevant change; improving the network, preparing Grundfos R&D for the future.

Throughout the study, context has become significant for understanding the current situation and how to consider improving for the attainment of future goals. Grundfos R&D aspires to continue to grow, developing a Global R&D Network that will facilitate quick and efficient cross unit collaboration. Therefore, when I evaluate context in this study, it has been with a primary focus on the internationalization of R&D activities and what the means for Grundfos, its structure and its people. One of the most influential aspects of the context in this case is globalization and the internationalization of R&D activities.

Besides a passion for innovation, globalization sets the tone for how the work should proceed and it adds complexity to Grundfos R&D, however, internationalizing R&D activities, “...is a consequence of a primary target” (DK006) and that target is to be closer to target markets, not just with sales and manufacturing but also with research and development. Not having R&D housed in Bjerringbro, Denmark has significant repercussions for the R&D network and network participants. The primary issue is one of perception; however, since perception affects how individuals interact, it is worth noting. In R&D DK, the word headquarters is never used, when referring to R&D, individuals use R&D, BD (Business Services is the building that houses R&D) or the Global R&D Network. When I visited R&D US or R&D China, there was an explicit distinction of Denmark being the headquarters. This creates a ‘we vs. them’ perceptual barrier that inhibits smooth working processes and the

development of the R&D Global Network; such a perceptual barrier can be overcome through, a focus on collaboration, a clarification of purpose for the networks and the development R&D knowledge workers.

Paradoxical and symbiotic relationship between network autonomy and inter-dependence

In the analysis I realized that what could be perceived as dichotomy is actually a symbiotic relationship in these networks. These networks are characterized by both a need for autonomy and a need for interdependence. These networks are simultaneously relationship-based, project-based and results-based. And these multiple focuses all mean that interactions, associations and relationships play a key role in the execution and success of work tasks, as well as the development individuals and the network as a whole. The analysis also revealed the importance of credibility and influence in establishing network relationships and a reputation. This means that management should prioritize *clarifying the context, providing intra- and inter- personal dynamic techniques for better navigating cognitive and relational dynamics and providing a set of managerial processes to facilitate the first two points.*

These revelations lead us to discuss the inter-link between networks and culture—*roles and purpose*. As the analysis in PART II proposed both networks and culture benefit from having roles and purpose. Culture in organizations identifies its roles and purpose through the organizational context, the founder, organizational boundaries and the organizing metaphor, while networks recognize, in this case several layers of roles and purpose, for example, the analysis considers the role of network members as knowledge workers to be more appropriate and the need for role clarification along managerial layers of the network to be beneficial for the practical implication of overall organizational strategic objectives.

The inter-link between culture and individuals emphasizes *interaction*, in this case the analysis in PART I recognizes culture in action, to focus on three primary areas: identity and perception, the symbiosis between needs and relationships in these networks and how a refocus on: 1) individual needs, 2) the need of the other and 3) the relationship as a whole, would result in better handling of individual interactions. The focus is on the long-term relationships versus the immediate opportunities. Lastly, this study suggests that exploring where in interaction cultural manifestations arise will enable us to identify how to improve these processes by removing a focus on myopic differences and instead re-focus on the objectives of the interactions and on developing the relational bonds necessary in these networks all this in the greater context of the organizational objectives.

Network members need to be able to be very good at networking specifically for these types of networks. This means among other things there should be a focus on developing long-term *relationships*, on creating new knowledge based on sharing expertise and experiences. The focus should be on the longitudinal cumulative process since networks have intertwined intertemporal as well as relational dependencies. It is as one engineer explained, network success is not contingent on protecting your knowledge but in developing it and you do that by sharing what you know with others. Network members have an explicit awareness that working together will produce a greater output, therefore sharing and working together is essential. Moreover, because the network is spread out, it is important to develop continuous yet purposeful interactions.

12.10 Focus on the Future

The journey ahead- embracing change

PART I analyzed both the three most significant components for the improvement of collaboration—culture, networks and individuals and their interactions. PART II further analyzed the inter-links between the above components revealing three other concepts—interaction, roles & purpose and relationships, that are also important for understanding and the improvement of collaboration in Grundfos R&D.

Based on the analysis of PART I and II, I have selected the following four central points that critically influence the contextual understanding of Grundfos R&D Network and its development. These will be discussed below.

- The realization that knowledge cannot be housed, and shared in the same way we share information; knowledge is a completely individual experience.
- The importance of understanding culture in organizations as culture enacted through interaction
- The importance of the individual and their interactions
- Networks and the significance of network relationships

Knowledge, redefined

Knowledge is vital to the innovation of research and development for Grundfos. I clearly remember this citation, “*Knowledge is carried amongst people.*” (C028) Knowledge as the excerpt states is carried amongst people and while individuals can share information and stories, they cannot share their knowledge exactly as it has been obtained and developed. This means that individuals in this network become highly valuable and unique. Not only are the individuals vital but also their associations; this sharing and intimate collaboration between colleagues is also significant for the creation and development of more innovative solutions. Without these interactions and relationships, new knowledge will not have an opportunity to develop. Creating access points for information dissemination through interaction will enable the development of knowledge.

Culture in organizations, new perspectives

Taking into consider that individuals are the bearers of knowledge, then we need to better understand them so that we can suggest how to improve interactions and more importantly how they best collaborate for achieving task completion. This study proposes two ways in which we can better understand individuals specifically for working in intra-organizational knowledge networks: through culture and through cognition.

In this study, culture in organizations is enacted by interaction and developed through relationships; it is a by- product of interaction between individuals. Culture cannot live independent of individuals. Culture is a tool for identification and explanation; for making sense of context cues. Cognition is all mental processes of individuals such as thinking, understanding, learning and remembering.

Culture also has a big influence on the context of Grundfos R&D. There has been much focus on culture in this case, I believe ill-placed on national culture perspectives. The aim with national cultures theories used in organizations is to facilitate better communication across colleagues from different countries by providing a set of dimensions with national culture characteristics. The idea is

that we place people into dimensions. To me, the idea is utterly ridiculous when it comes to the work of intra-organizational knowledge networks or any other context where the emphasis is placed on the unique knowledge, expertise possessed by individuals, on the relational associations and on intra- and inter-personal dynamics as a whole. How then will specific country dimensions assist me in communicating? It will not. It will limit the scope of interaction. It will paint of mental picture of the person I will meet even before I meet them. Therefore, this analysis has clearly proposed that national culture perspectives are limiting towards interaction and the development of relationships.

The most traditional considerations focus on cultural differences and the physical distance. This study has dug deeper, revealing more crucial and essential aspects of intra-organizational, multi-cultural (complex) knowledge networks. An overemphasis on national culture differences is a focus on the symptoms and not the real issues. Management needs to break the hold of national culture, this perception of national culture education and training being able to better prepare employees to tackle inter-relational, dynamic interactions, is not a plausible proposition. However, until now, while some have spoken about this issue, few models or frameworks have provided the ease of delivery and implementation national culture theories provide and this plays right into the organizational need for efficiency and organization explained by the organizing metaphor. There needs to be a reeducation of culture in organizations as culture enacted through interaction and developed by relationships.

The analysis in PART I also expanded on context, these discussions should begin to shed light on the discontinuity between the contexts of the organization and how we have been exploring culture therein. Understanding that culture in the context of intra-organizational knowledge networks is much more dynamic and dependent on the individuals and their interactions is essential for improving collaboration processes. Cultural dimensions fall short of explaining the complexity of inter and intra personal intricacies and relational dynamics. In thinking and through interactions—where thoughts develop is what determines how individuals behave, which creates culture. Culture at this level is not about order; it is about understanding, building relationships and through these, building trust. It is about adapting and being self and socially aware.

Focus on the individual and their interactions

There is an ever present dichotomy between the representation of individuals in business and the application, and actual understanding. However, at the same time we are experiencing an evolution of the individual in business. From the time of the industrial revolution to present day has seen the focus shift from individuals fulfilling a process role in a semi-automated industrial process versus individuals as a thinking, evaluative part of the organization. The literature acknowledges this change with concepts as human and social capital, yet I believe we have only scratched the surface of how we perceive individuals in organizations. This study and this analysis contribute to the further identification of the significance of individuals in business.

This study has identified a more practically-appropriate way of understanding individuals for these types of networks as twofold: first individuals are a combination of their *identities* and their *perceptions* and these are always confronted, affirmed, and/or reaffirmed through interactions. Secondly, individuals can be understood through three basic aspects: 1) experiences, 2) needs and 3) emotions, as these greatly influence how individuals perceive and interact. This two fold understanding of individuals specifically for Grundfos R&D Network provides individuals frames of

reference for improving their self and social awareness, through either a reflective internal process or a social exchange ratifying co-experienced activities. These reflections allow individuals to evaluate what roles and purpose is guiding interaction and what contextual cues are framing interaction. This study also provides four social process techniques: perceptual readiness, sensemaking, self-monitoring and social comparison theory that can also facilitate improving self and social awareness for better collaboration.

Individuals infer contextual cues to understand their environment and these judgments are primarily based on visual cues. I would suggest there are three major telling aspects of culture that affect how we understand others. Where an individual comes from, what an individual looks like and what language(s) an individual can speak. These three aspects should be attributed to how individuals tend to see myopically rather than profoundly. Both the literature on learning as well as the literature reviewed on the individual point out that individuals have a predisposition to cluster people into different groupings. Thus, individuals create stereotypes partly on how they have learnt to understand culture from their process of socialization primarily as children and therefore, cultural training builds on the natural predisposition of cognitive processes further segregating people by country of origin characteristics, possibility limiting the ability for individuals to read relevant contextual cues as well as limiting the potential scope for better understanding others through interaction.

Network Relationships, the vital life force

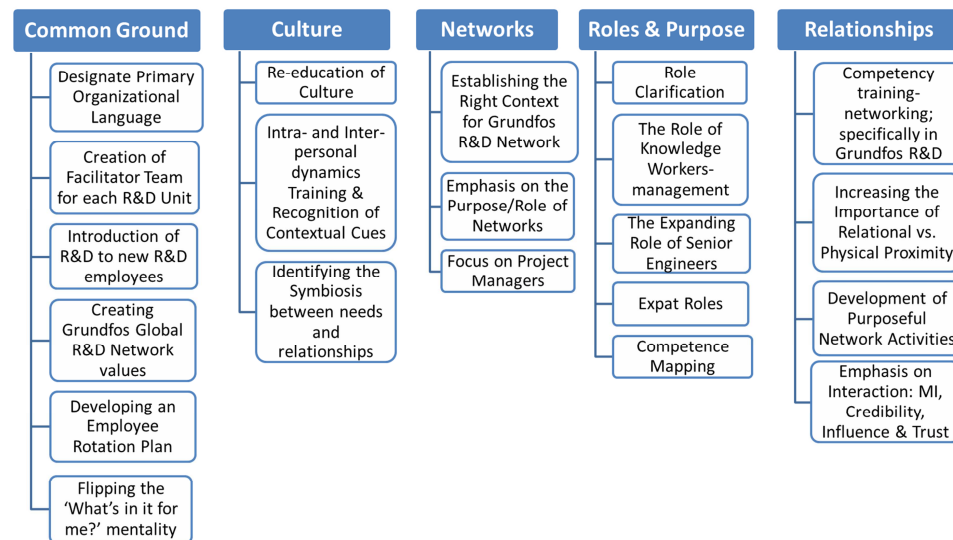
Networks are also a significant component for improving collaboration processes. This study revealed the emphasis of the individual and their interactions in networks. [PART I](#) outlines four key aspects of networks: 1) achieving task completion, 2) gaining access to information, 3) developing relationships and 4) participating in network activities. While each of these is important in its own right, the impact of relationships as the inter-link between networks and individuals was a very interesting revelation. Furthermore, the significance of relationships in creating sustainable network structures through four quite simple aspects: 1) the development of mutual orientation, 2) the acquisition of credibility through successful task completion, 3) the acquisition of influence among network members through the building of reputation due to successful task completion and 4) the development of trust through continuous positive interactions where relational bonds are strengthened and mutual orientation is solidified and/or affirmed.

This section has presented the context and four central corresponding points that influence the context, providing a concluding discussion of the analysis in [PART I](#) and [PART II](#) juxtaposing the barriers and the new considerations on how to tackle these barriers for improving collaboration and taking advantages of the synergies of the Global R&D Network. The following section brings the chapter to a close by presenting the suggestions for Grundfos and their Global R&D Network.

12.11 Suggestions

The following section presents suggestions for Grundfos R&D. As discussed the three components of collaboration—*culture, networks and individuals and their interactions* and their inter-linking concepts—*interaction, roles and purpose and relationships* are highly inter-related, therefore, I find it best to highlight the following five areas of practical interest for Grundfos R&D: 1) creating common ground, 2) culture enacted through the individual and their interactions, 3) networks, 4) role clarification, and 5) relationships. The suggestions are written with the purpose of idea generation and summarized based on the theoretical and empirical analysis as a whole. Each suggestion concludes with an explanation of the anticipated results for improvement and in which of the components and inter-linkages the improvements would be seen. The table below provides an overview of all the suggestions.

Table 27- Suggestions for Grundfos R&D Network



12.11.1 Creating Common Ground

This study has placed a heightened emphasis on the context and complexity of Global/Multi-national R&D Networks. The need for clarifying the ambiguous and making basic things explicit has become a reoccurring phenomenon throughout this study. For this reason, I choose to begin the suggestions with this section called creating common ground. The following six suggestions under Creating Common Ground serve to target key areas that would facilitate clarity and explicit expectations across the R&D network:

- Designate Primary Organizational Language
- Creation of Facilitator Team for each R&D Unit
- Introduction of R&D to new R&D employees
- Creating a Grundfos Global R&D Network set of Values
- Developing an Employee Rotation Plan

- Flipping the 'What's in it for me?' mentality

12.11.1.1 Designate primary organizational language

Special focus on email correspondence

While officially Grundfos has identified English as their company language the data highlights issues with communication, specifically with regards to email communication. This was primarily seen in the data from R&D China. All communication with the exception of informal, one-on-one, face-to-face communication should be conducted in English.

Anticipated improvements: Reduction or removal of issues with miscommunications and improve efficiency in work processes as individuals will not have to either ask to have emails translated and/or have managers using up their time on translating emails that could be misinterpreted while translating.

This suggestion will facilitate improvements under the inter-links: interactions and relationships, thus improving culture in interaction through communication and networks through relationships.

12.11.1.2 Creation of Facilitator Team

The data from all three units highlighted issues with transparency, not intentional but rather as a byproduct of the ever expanding context and complexity that network participants have experienced and will continue to do so contingent on the aspirations to grow a Global R&D Network. The need for access to the right information and the right people is an essential aspect for improving collaboration. Therefore, the creation of a Facilitator Team for each R&D Unit is imperative. The facilitator team is a multi-purpose initiative facilitating the gather of information on people, projects, specific unit processes, for the unit serving as a mediator in and between units as well as the greater Grundfos context, e.g., People and Strategy and Management.

Anticipated improvements: Development of Facilitator Team will create an access point of human contact for official and up-to-date R&D unit news and information reducing the perception of lack of transparency. This will improve role clarification, make networking more viable across the network, improve accessing information from a primary and official source, and will keep network participants across the network well-informed on possible network activities that may be well worth attending further strengthening the development of network relationships.

This suggestion will facilitate improvements under the all three components and all three inter-links.

12.11.1.3 Introduction of R&D for new R&D employees

Explicit Expectations of the Grundfos R&D Network –articulating the basic rules of the game

Most large multi-national organizations have processes called 'orientations' for introducing new employees to the organization. However, as the data indicated Grundfos R&D has developed exponentially in the last couple of years, causing there to be a gap between what information new employees are equipped with and what they need to know. I suggest Grundfos R&D create a specific orientation geared towards R&D employees, where they are specifically informed about the following: 1) the R&D context- how we work, 2) expectations- how you should work, and 3) what does it take to succeed-the importance of relationships and credibility in Grundfos R&D. Much of

what lies behind these three points is identifying and relaying R&D values to new employees, for example the importance of developing new knowledge together by sharing experiences and expertise with other network members is critical in Grundfos R&D. Metaphorically speaking, one cannot be expected to play a game without the rules, therefore, Grundfos R&D needs to provide these 'rules' to its new members and perhaps refresh them with existing ones.

Anticipated improvements: Providing explicit understanding of the context for new members will improve role and purpose clarification facilitating better use of network resources.

This suggestion will facilitate improvements primarily under culture and networks with a focus on improving all three inter-links—interactions, roles & purpose and relationships.

12.11.1.4 Creating a Grundfos Global R&D Network set of Values

The last suggestion emphasized R&D values; I believe that these values should be better articulated than they are now. Of course, R&D values should be an extension of the already existing Grundfos values. It is not about reinventing the wheel rather it is about emphasizing what is important for R&D and making these explicit with an end result of improving the working environment or the context. The following seven characteristics of Grundfos R&D identify from my observations and data collected what are important values for successful task completion and overall long-term network collaboration: 1) networking styles- meetings and roles, 2) flat structure, egalitarianism, 3) autonomy and inter-dependence, 4) importance of being self-lead and direct communication, 5) importance of developing strong relationships, 6) focus on Innovation and developing new knowledge and 7) collaboration and individual expertise are both essential.

Anticipated improvements: Providing an understanding of the underlying values that are important for R&D work, will create awareness for existing employees and direction for new employees. Providing explicit understanding of the context for new members will improve role and purpose clarification facilitating better use of network resources. Moreover, this focus on successful task completion and organizational values will remove the focus on national culture characteristics by strengthening network relationships.

This suggestion will facilitate improvements under the all three components and all three inter-links.

12.11.1.5 Develop an Employee Rotation Plan

The data highlighted the need for face-to-face interactions between network participants. Developing an Employee Rotation Plan will facilitate collaboration by providing perspective, opportunity to gain access to new information, develop relationships and participation in network activities. While it would be beneficial for all network participants to take part of the rotation plan across the R&D network, initially, I believe this initiative should be aimed at management, project managers as well as R&D employees from R&D US and R&D China (and the rest of the R&D units that are part of the network).

Anticipated improvements: Providing perspective of how 'the other' works, will aid in better understanding the daily work context of colleagues, this can provide individuals with the opportunity to uncover mutual orientations, strengthening relationships. In a wider context, this will also create what the literature called weak ties across the various units, strengthening the diversity of information and increasing the possible types of collaborations.

This suggestion will facilitate improvements under the all three components and all three inter-links.

12.11.1.6 Reversing the ‘What’s in it for me?’ Phenomenon

This study has highlighted the importance of context and cognition, specifically perception for how individuals understand the context they find themselves in. This suggestion focuses on creating awareness by management throughout R&D where the phenomenon, ‘What’s in it for me?’ gets turned on its head as an exercise in reflection. For example, one could ask themselves, *“Is this a good decision for Grundfos at a group level? Does it support the group’s visions and strategy overall? What does it do for other regional levels? What does it do at a local unit level? What about the department level or what about the various project levels? Finally, what’s in it for me?”* There is a dichotomy in Grundfos R&D with regards to asking individuals to be both autonomous and inter-dependent; however, this is a consequence of the context of innovation. Employees need to be free thinkers and not be restrained yet, they should not forget they are part of something bigger and are not in this network for themselves. While admittedly difficult to implement at the individual level, management can support functional and project managers in adopting this reflection tool and sharing it with their colleagues.

Anticipated improvements: Such a reflection tool should improve the way individuals see themselves as a part of the whole instead of as the whole. Moreover, this tool should reconsider the purpose of some initiatives and assist in re-clarifying roles in the network. Lastly, from a long-term perspective, this thinking will help change the culture in the organization, bringing balance to the dichotomy between autonomy and inter-dependence.

This suggestion will facilitate improvements under the all three components and all three inter-links.

12.11.2 Culture enacted through Individuals and their Interactions

The analysis has illustrated the need for a perspective change on culture in organizations. The analysis has shed light that culture is enacted through interaction and developed through relationships and is not about characterizing individual’s traits by country of origin characteristics but rather letting an individual’s identity and interactions identify how you should understand them, and thereafter further relate with them. PART I emphasized this reeducation of culture in action through three key considerations: 1) individuals in culture, basically exploring the self in interaction, 2) individuals in interaction, a focus on needs and relationships and 3) culture in interactions through two specific and practical aspects of interaction: communication and learning. PART II further emphasized the need for individuals in understanding culture by identifying interaction as the inter-link between culture and individuals, thus the name of this second practical area of interest—culture enacted through individuals and their interactions.

There are three suggestions under culture:

- Re-education of Culture
- Intra- and Inter-personal dynamics Training & the Recognition of Contextual Cues
- Identifying the Symbiosis between Needs & Relationships

12.11.2.1 **Reeducation of Culture**

Culture in Action vs. National Culture

In PART I of the analysis I introduced two propositions under the culture discussion and these led to a reconceptualization of the concept of culture in organizations through a reeducation of culture as culture in action. The reeducation of culture in organizations originates in the context of this study, in the needs of the individuals to succeed at the work both from a short-term as well as long-term perspective and ultimately the success of the network to fulfill organizational aims. The following two suggestions are extensions of this suggestion and elaborate on the practical implications of such a reeducation.

In these types of networks, culture is enacted through interaction and developed through relationships. Thus, linear thinking about specific country characteristics inhibit interactions through the development of narrow cognitive prototypes at worst case stereotypes and restrict the identification of mutual interest and the further development of relationships. It is imperative that we begin to change this limiting mindset and teach network participants to think of culture from an interactive, associative perspective instead of a national culture one.

Anticipated improvements: Providing new perspectives on how to understand culture and how to thus interact with others opens up how individuals identify themselves and perceive others; also improving the development of relationships and through this, the collaboration in the network.

This suggestion will facilitate improvements firstly, under culture and individuals and their interactions and as a result improving networks. It also improves by association the following two inter-links: interaction and relationships.

12.11.2.2 **Intra- & Inter-Personal Dynamics Training & the Recognition of Contextual Cues**

The previous suggestion presented the need to understand culture in organizations through individuals and their interactions—culture in action. This suggestion expands on the above by focusing on the following two aspects: 1) intra- and inter- personal dynamics and 2) the recognition of contextual cues, as these two aspects of interaction are highly inter-related.

The data has revealed that cultural training while novel is not applicable to the complexity of intra- and inter-personal dynamics in interaction. Both academic scholars and practitioners alike have inadequately applied national culture dimensions, a macro-level managerial tool towards the management of individual and relational dynamics. This is precisely why cultural training does not achieve the results management expects it to, it is simply misplaced.

Instead I suggest a focus on how to prepare and further develop network participants for the changes the *context* has been experiencing that are primarily driven by 1) its size and 2) structure. My point here is to focus on the context and how the changes have affected R&D employees and thus, what tools/skills they are missing to succeed.⁴⁸ R&D activities such is the case in Grundfos have

⁴⁸ Of course, there are other aspects that affect the context, however, the context will be further expanded upon under networks in the following section, this suggestion focuses on the individuals and how context affects them not the context itself.

exponentially expanded and therefore, the structure has changed from having R&D as a function of HQ to inter-dependent aspect of the globalization of the organization. Thus, individuals need to be prepared for this context.

In Chapter 11, when reviewing the individual and their interactions I presented four social process techniques: *perceptual readiness*, *sensemaking*, *self-monitoring* and *social comparison theory*. These techniques are a tool box that can prepare individuals to become more self and socially aware, recognizing the various contextual cues in each predicament, thus more mindful of what they think and how it will ultimately guide their actions and decisions.

Anticipated improvements: This suggestion provides new perspectives on how to understand the self, how to better navigate the context and how to best interact having a greater awareness of the both the self and context.

This suggestion will facilitate improvements firstly, under the individuals and their interactions and as a result improving networks. It also improves by association all three inter-links: interaction, roles & purpose and relationships.

12.11.2.3 Identifying the Symbiosis between Needs & Relationships

Once again the importance of individuals and their interactions is emphasized by the following suggestion. I first introduce this idea in the analysis when discussing the re-education of culture in organizations; I suggest that individuals in interaction consider the symbiosis between needs and relationships. The idea here is that needs, not just individual needs but also relational needs that take into consideration mutual interests and a perception of the future of the relationship (in this case we are assuming positive outcomes) should guide exchanges, interactions rather than our own, perhaps selfish needs.

Anticipated improvements: This idea provides the opportunity for the development of trust, strengthening relationships and also encourages the long-term development of the relationships and networks through the generation of natural vs. opportunistic reciprocity.

This suggestion will facilitate improvements firstly, relationships and interactions and as a result improve networks and culture.

12.11.3 Networks

Another practical area of interest in this study is the actual network. Networks in this study are complex structures that individuals create through their interactions to satisfy their needs and develop their interests. In PART of the analysis I presented four key purpose/roles for successful network collaborations, namely: 1) achieving task completion, 2) gaining access to information and knowledge, 3) developing relationships and 4) participating in network activities, however the suggestions that follow focus more on the overall concept of networks for this study as many of the other suggestions address the above four key purpose/roles of networks. The following are the three suggestions under networks:

- Establishing the Right Context for Grundfos R&D Network

- Emphasis on Roles & Purpose for Grundfos R&D Network
- Focus on Project Managers

12.11.3.1 Establishing the right context for R&D Global Network

Under the suggestion *Creating common ground* I suggest how developing a set of values specifically for the Grundfos Global R&D Network will improve collaboration through clarifying expectations and the underlying values of the work and its processes. This suggestion is also aimed at creating common ground, however, more specifically focused on networks. I find that the context in Grundfos R&D Network is quite complex because while the organization has overall strategic objectives and during the study the organization also had the white paper called the *Innovation Intent* to guide the contextual understanding, still I found that there were quite significant rifts between organizational, R&D unit, and individual perspectives. The analysis in [PART I](#) also discussed context and how it affects how individuals perceive their environment. Therefore, my first suggestion for improving networks is for management to establish the right context for the Grundfos R&D network. Just like individuals' thoughts guide their actions, context frames the united focus of the organization. I would suggest that Grundfos consider the following contextual focus, here I have further identified the following five key characteristics based on the list of nine from the analysis [PART I](#): 1) Long-term focused, 2) knowledge network mindset 3) Invested interest or a willing inter-dependence, 4) importance of relationship development and 5) the importance of culture in action.

Anticipated improvements: Refocusing and prioritizing the context will further enable the four key aspects of networks to function more purposefully. It provides network participants with the opportunity to better organize their roles and work tasks accordingly. The R&D culture becomes more explicitly delineated first by the values and now by the context.

This suggestion will facilitate improvements for networks through individuals and interactions with the help of all two inter-linking concepts, roles & purpose and relationships.

12.11.3.2 Emphasis on the Purpose/Role of Networks

Just as it is important to create common ground and to identify the key contextual factors that will drive action, it is also important to understand the purpose in these networks. I have identified four key purpose/roles for these R&D networks as: 1) achieving task completion, 2) gaining access to information and knowledge, 3) developing relationships and 4) participating in network activities. It is just as important for management to understand the purpose and roles of networks as it is for them to understand the significance of interaction for successful collaboration. To simplify the above four key purpose/roles of R&D networks consider that if we had to choose one of the four as the primary purpose, it would be to gain access to information so as to successfully achieve work goals, however this study proves that this can only be achieved through a combination of role clarification and development of network relationships.

Anticipated improvements: This idea provides the opportunity for strengthening how we understand networks as well as how we use them thus encouraging a focused and applied usage of networks.

This suggestion will facilitate improvements firstly networks and interactions through roles & purpose and as a result improve, relationships, networks and culture.

12.11.3.3 Focus on Project Managers

Project managers have a significant role for Grundfos future ambitions towards creating a global R&D knowledge network. The data reveals the significance of the role of the project managers. For example, in R&D China the data shows that project managers influence their project teams based on their own beliefs of what is a successful project team, R&D office culture and the overall Grundfos culture. The sentiments are also paralleled in R&D Denmark project managers have been referred to as “cultural bearers”. Project managers serve as what the theory calls a “collaborative capacity builder” (Weber and Khademian (2008:335), any individual not just managers that exude leadership qualities. In this case Project Managers are in a prime role to take up being bridges between individual employees and the greater ideas put forth by Grundfos management to “integrate disparate knowledge” “through understanding knowledge as practice” with a deep understanding of the contextual boundaries and specific understanding needed in each context to be able to unravel the sending, receiving, comprehension, and integration of knowledge in practice “all in an effort to build and sustain collaborative capacity.

Anticipated improvements: I propose Grundfos should focus on project manager’s role in the network as this idea provides the opportunity for strengthening the network purpose and culture through interaction.

This suggestion will facilitate improvements primarily through interactions and roles & purpose and as a result improve networks and culture.

12.11.4 Roles & Purpose

Roles & Purpose is the inter-linking concept between networks and culture as both benefit from framing and it is my opinion this framing comes best from the work tasks and the organizational context as a whole rather than elsewhere. Therefore, roles and purpose are a significant practical area of interest for Grundfos R&D networks to consider improving. I have decided to focus on the following five suggestions under Roles & Purpose as they target key areas for improvement:

- Role Clarification
- The Role of Knowledge Workers- management
- The Expanding Role of Senior Engineers
- Expat Roles
- Competence Mapping

12.11.4.1 Role Clarification

The role in which Grundfos R&D is seen has overlapping ramifications not just for themselves but also for the overall optimization of Grundfos; how the Grundfos R&D Network works, how effectively global collaboration contributes to the overall ambitions of the 2025 Innovation Intent and how projects successfully develop. Based on my data collection, understanding of the context, I have surmised there to be four possible roles for the R&D units: 1) global network member, 2) headquarters vs. subsidiary, 3) regional team/unit and 4) support staff. These roles in reality are not exclusive and in all practicality depend on the project task the unit and/or the individuals may undertake any of these roles.

When you consider Grundfos ambitions for a global network there exist a bit of truth in every role listed above and Grundfos employees will have to understand their roles and their perceptions of these, respectively. Moreover, Grundfos needs to create avenues for R&D units and their employees understand their roles and so that they believe they have a valuable stake and contribution in the Grundfos Global R&D Network.

Anticipated improvements: I propose Grundfos should focus on communicating and clarifying the various roles of the network. I foresee this awareness soothing work processes that are otherwise obscure.

This suggestion will facilitate improvements primarily of networks through interactions and roles & purpose.

12.11.4.2 The role of knowledge workers- management

Part of improving roles & purpose for the R&D network is in understanding the roles of its participants and this I believe is also in need of an overhaul. The network participants are not just Engineers, they need to be much more, thus the identification of their role as knowledge workers.

Anticipated improvements: The idea here is that through a more accurate and comprehensive understanding of the role of the employees, they will be better appreciated for their efforts and they will feel more appreciated and willing to contribute more, since they will be inspired to participate.

This suggestion will facilitate improvements primarily through individuals and their interactions and roles & purpose and as a result improve networks and culture.

12.11.4.3 Expanding Roles of Senior Engineers

Grundfos R&D is a mature organization with many 'established' employees. The internationalization of R&D can have ramifications on senior engineers. It is highly relevant to identify these individuals for the dual purpose of 1) appreciating them and 2) involving them in the new changes so as not to lose them.

Anticipated improvements: Grundfos would benefit from maintaining an awareness of the needs of senior staff, making sure they are still inspired and find the work challenging and also develop ways for their expertise to be shared with those that would benefit. One example could be of combining this suggestion together with the suggestion of developing purposeful network activities where senior staff could give a talk about any self-chosen topic from their expertise, thus providing avenues for the dissemination of knowledge through casual setups where attending individuals can also talk with others that share an interest for the subject.

This suggestion will facilitate improvements primarily through interactions and roles & purpose and as a result improve networks and culture.

12.11.4.4 Expat Roles

The importance of expat roles was introduced in the data presentation. Admittedly, all roles not just expat roles should be important to explore. There are several reasons why this should be a point of concern for Grundfos, specifically when taking into consideration their ambitions for a global R&D network. Firstly, the needs of expats upon their return cannot be an after-thought, there should be

explicit career paths and future opportunities discussed and accounted for before the journey begins. Expats become what I would call “in-betweeners”. Simply put in-betweeners are expats that come home with additional perspectives, understandings and experiences. This new knowledge, experience and most importantly network relationships provide them with the ability to identify situations, opportunities and problems that those that have not been abroad cannot see. This is the diversity that is talked about in the Grundfos branding mediums, and it is being integrated and infused into the organization as we speak, however, it can be lost if we do not know how to preemptively plan for its use.

The second reflection from the above excerpt is two-fold. Firstly, we cannot continue to pull on expats “trusted connections” what we would call strong relationships because let us be clear, an expat only has a limited amount of “trust connections” and it will only be a matter of time before they are exhausted if they are the only source of expanding global networks. Secondly, there is a very real problem with connecting individuals together when one part of the link does not know how to use the connection. So, without training colleagues in networking and giving them the confidence to understand how to pull on the different resources, the likelihood as some interviewees have noted is that the connections become dead links, in other words they are never used.

Anticipated improvements: The idea with this suggestion is being proactive to tackle the usage of expat network relationships as well as how to deal with expats upon their return. This will help improve misplaced expats and/or exhausted personal networks that need to be rebuilt or started from scratch.

This suggestion will facilitate improvements primarily through interactions and roles & purpose and as a result improve networks and culture.

12.11.4.5 Competency Mapping

During the time of this study, those responsible for Competence networks were in the process of collecting their own set of data to compile a comprehensive competence mapping for R&D China. I find that competence mapping should be compiled for the entirety of the Grundfos Global Network. Competencies are quite important in R&D networks, as they facilitate the development of relationships and the acceptance and inclusion into the wider network environment. Competence credibility is achieved by successful completion of project group tasks, supporting others successfully in their objectives and/or providing guidance to colleagues.

Anticipated improvements: This suggestion provides the organization with the opportunity for identifying the strengths and weaknesses of each unit, where senior colleagues are located in the network. Moreover, mapping the competences allows network participants to know who to contact depending on their needs, thus improving access to information and facilitating the achievement of work goals.

This suggestion will facilitate improvements firstly, networks, and roles & purpose.

12.11.5 Relationships

The analysis has illustrated the need for interactions as the inter-link between culture and individuals and relationships as the inter-link between networks and individuals in PART II.

Moreover, the analysis in PART I has thoroughly explained the vital role of relationships in networks, in culture in action as well as for the individual and their interactions. And relationships have been a reoccurring point of discussion through the suggestions. This section is specifically focuses on relationships of course all the while remaining in the context of R&D networks. There are four suggestions under relationships:

- Competency training-networking; specifically in Grundfos R&D
- Increasing the Importance of Relational vs. Physical Proximity
- Development of Purposeful Network Activities
- Emphasis on Interaction

12.11.5.1 Competency Training- Networking; specifically in Grundfos R&D

Developing the competency of networking for R&D network members throughout Grundfos R&D will enable the development of identifying a common ground; a common language. Knowing that each participant in the network understands what it means to network for Grundfos R&D will enable network participants to be better equipped to succeed at each of the four key purposes of networks outlined in part I of this analysis. Additionally, individuals that are highly capable at networking will tend to be more cognitive and relationally aware, a great competency since the act of networking requires individuals to have a keen perceptual and social understanding.

Anticipated improvements: This idea provides the opportunity for the development of trust, strengthening relationships and also encourages the long-term development of the relationships and networks through the generation of natural vs. opportunistic reciprocity.

This suggestion will facilitate improvements firstly, relationships and interactions and as a result improve networks and culture.

12.11.5.2 Increasing the Importance of Relational Proximity vs. Physical Proximity

The identification of relational vs. physical proximity is quite phenomenal for this study as well as others like it. The data showed a predisposition for individuals to be more comfortable with those that are physically close to them (it is not just the physical closeness but the relational bonds that physical proximity produce). This 'feeling' is substantiated by social comparison theory where 'people like to associate with others that are similar' (Festinger 1954 in Kilduff and Tsai 2009:52) as it is comforting to be reassured and recognize yourself in others. Additionally, there are two other phenomena identified in the data that apply here: 1) Out of sight, out of mind in reference to globalization and 2) individuals prioritize by association. All three points draw attention to the ever increasing importance of relational and physical proximity. This is quite a conundrum for a Global R&D Network, therefore, it is essential that management realize the importance of relational proximity over physical proximity; this will at least reduce the need to work together in the same location. Secondly, here it should be quite clear that relational bonds are incredibly important in getting work accomplished. This should be enough to realize that individuals and their interactions are vital for network success.

Anticipated improvements: This suggestion provides focus on the significance of individuals in business and furthermore, for network success.

This suggestion will facilitate improvements firstly, in relationships and as a result improve networks and revamp the way individuals are understood in business.

12.11.5.3 Development of Purposeful Network Activities

The context of Grundfos R&D has changed for many reasons. The business has become multi-national and desires to achieve a global level of collaboration. Currently, there is a mismatch between context and the tools/processes in place for achieving this global level of collaboration. Grundfos R&D can no longer wait 12-15 years for R&D employees to cultivate a 'historic network'. Grundfos should develop purposeful network activities that facilitate the development of relationships and building of network connections amongst colleagues across the R&D global network, e.g. technical conferences. This will cost but it should be seen as an investment.

In the above suggestion physical proximity has become a crutch limiting the development of network relationships, yet from the perspective of this suggestion physical proximity with those that you have not yet established a relationship, in other words, that are new to your network, allows for opportunities to strengthen bonds. Above it is implied that physical proximity is with reference to permanent situations.

Anticipated improvements: This suggestion provides emphasis on the need to develop opportunities to develop relationships that will facilitate an improvement of all four key aspects of networks presented in PART I of the analysis, such as role clarification, gaining access to information, developing relationships, and participating in network activities.

This suggestion will facilitate improvements under the all three components and all three inter-links.

12.11.5.4 Emphasis on Interaction

The more positive exchanges network participant have, the most likely they will develop relationships, however, without interaction individuals do not create their own experiences and thus, their judgments of others are based on hearsay. Additionally, this is why I explicitly state there needs to be many positive exchanges, the more, the better, this way individuals are able to test their assumptions of others and obtain a more concrete assessment based on their own experiences. Just as with the development of activities suggested above this emphasis on interaction should be clearly purposeful for the organization that is why role clarification and roles and purpose are vital for network relationships.

Anticipated improvements: This idea provides the opportunity for strengthening relationships and also encourages the long-term development of the relationships.

This suggestion will facilitate improvements firstly, relationships and interactions through roles & purpose and as a result improve networks and culture.

Chapter 13-

13 Conclusion

This study began by exploring the phenomena of intra-organizational, multi-national knowledge networks through the case of Grundfos Global R&D Network, which lead to the deconstruction of the three most significant components of collaboration—*culture, networks and individuals and their interactions*, together with the thematic analysis and development of the data collected. This study's focus has always been on improving the business environment through collaboration with the end goal of improving business development. This study begins to provide closure in Chapter 12 with an extensive analysis of the three components, their inter-relationships, a practical discussion of the analysis and practical suggestions.

This chapter brings to this study to a close by revisiting the research questions, reviewing the methodological journey by which new understandings and new knowledge has been development and lastly, discussing the limitations of this study and the future research direction.

13.1 Revisiting Research Questions

13.1.1 The Primary Research Question: Which components are influential to the collaborative process within International R&D Activities?

Through the primary research question this study's aim has been to find ways in which Grundfos R&D management could improve the working environment so that these improvements could provide opportunities for better business results not just for now but for the future as well. Gaining an understanding for Grundfos as whole and particularly for the business of R&D in Grundfos, together with the above aims of improving the environment I explored what was essential for R&D activities in Grundfos R&D. What I soon realized is that collaboration is vital for the success of the Grundfos Global R&D Network.

Collaboration is essential when individuals are involved in longitudinal, reciprocal work processes where the inter-dependence and exchange of information, expertise and knowledge is essential for the work and the business of the organization to succeed as is the case in Grundfos. Therefore, more specifically, the aim of this study has been to improve collaboration since in this context the lack of it is an impediment for the successful transnational working culture that is essential for Grundfos Global R&D Network. This focus on collaboration enabled me to further identify the three most significant aspects of collaboration processes within the Grundfos Global R&D Network (what I have also referred to as intra-organizational multi-national complex knowledge networks) are: *culture, networks and individuals and their interactions*.

The following sub-sections will recap each component with regards to the primary question:

13.6.1.1 Culture

Culture is one of the components that is significant to the collaboration processes of international R&D activities in Grundfos. There are a number of reasons why it is relevant to acknowledge culture

and how it is understood in organizations for the improvement of collaboration. Two of these reasons are identified in PART I of the analysis in Chapter 12.1 with proposition 1 and 2 restated in the table below.

Table 28- Review of Proposition 1 & 2 Regarding Culture's Role in Intra-organizational multi-national knowledge networks

<p>Proposition 1:</p> <p><i>When culture tends to be understood (simplified) through national culture dimension models that only provide a static, generalized picture of a nation's cultural traits, then interactions and relationships among multi-national, multi-cultural network members can become strained and conflicted when individuals and situations stray from the preconceived expectations generalized from said National cultural dimensions.</i></p> <p>Proposition 2:</p> <p><i>Culture in organizations is identity-shaping, context-identifying; evolving from the internal cognitive constructs of individuals enacted through interaction and developed through relationships rather than simply where people come from or what language they speak.</i></p>

My exploration of culture in Grundfos R&D revealed how the concept of culture in these networks was more about interaction and the combination of intra- and inter-personal dynamics rather than what country one originated from. The analysis revealed how strong relational bonds and trust are significant for how colleagues negotiate meaning from their interactions. For example, the data showed how due to their strong relational bonds non-Danish colleagues could infer Danish colleagues' intentions in communicating and would not take offense if/when they would experience what could be misinterpreted from a national culture perspective.

The reoccurring focus on the individual and on relationships in the case company made me re-evaluate how I myself understood culture in organizations and how the concept of culture and culture in organizations as been understood and explored in the literature. Traditionally organizations as well as a significant majority of business literature have explored culture from a positivistic, integrationist perspective, stated more plainly, they have made generalizations of people by grouping general country traits. This is what I referred to in my analysis as a focus on the pain instead of searching for the source of the pain, metaphorically speaking.

Since individuals have been educated to believe that the best and/or most efficient treatment of culture is through a better understanding of National cultural dimensions there are evident traces of this type focus on culture represented in the data, however, the data quite significantly illustrates the inherent limitations of understanding culture through this perspective in this context. Additionally, the data also illustrates time and time again the need of individuals in this context to simply have a different understanding of culture manifested through interaction, primarily at the relational level, what I referred to in the analysis as *Culture in Action* or simply understood as a *micro-practical focus on culture*. Thus, these reflections lead to the development of proposition 1 and 2 above that focus on understanding culture through individuals and their interactions.

This reconstructing of culture in organizations/ culture in complex knowledge networks places the focus on the environment and acknowledging the needs of the individuals as well as the long-term needs of the business. From this perspective we should consider the organization and its context first and explore how culture manifests itself, for what reasons it does so in these ways and if these understandings of culture impede organizational goals. If the current understanding of culture in organization does work as an obstacle towards achieving organizational goals then we need to consider how to reconstruct these understandings.

This study identifies this discontinuity between the experiences of individuals in R&D networks versus the general understanding of the concept of culture from a managerial perspective and how the concept of culture can be applied. This is mostly resulted because there exists an extreme focus on national culture dimensions partly due to 1) ease of applicability as well as 2) general proliferation of these theories in the business literature and in the business world, and 3) no other frameworks and/or understandings have been considered or such theories have not been fully understood or furthered developed making them less likely to be considered as ready for efficient applicability.

Given the context of these types of networks, the current understanding of culture is not useful or applicable. In order to improve collaboration through the concept of culture we need a reconstruct it as discussed in Chapter 12. In the analysis I propose a re-education of culture in organization that provides Grundfos R&D with identifying exactly what they need to improve collaboration and through it, the business of R&D. This re-education focuses on three areas of considerations for where the concept of culture can facilitate improving collaboration processes.

The first area of consideration is the Role of the individual in Culture focusing primarily on identity and the combination of perception and interaction. This study has emphasized the role of the individual and interaction and the analysis draws particular attention to the needs of individuals to communicate their identity with others, this contextual manifestations of an individuals' identity are clues that should guide us in our interactions with them rather than using National Culture categories, self imposing these characteristics that may or may not apply and will only limit the scope of interaction. Instead letting areas of mutual interest develop through exchanges and naturally create a mental picture, an understanding of others.

The second area of consideration is the Interplay between needs and relationships focusing primarily on needs as a catalyst for understanding others. This study has emphasized the symbiotic relationship between autonomy and inter-dependency of network members to achieve success and this second consideration brings culture down to a very practical level; again at the relational level. This can be achieved between a focus on the interplay between needs and long-term relationship focus. This second area of consideration focuses on both the needs of all those in the relationship as well as the relational objectives aspired to by relationships members. As explained in the analysis it is about an emphasis on positive outcomes of interactions and the overall nurturing of the relational bonds and less focus on the possible miscommunications, on the differences.

The third area of consideration is the Dynamics of culture enacted through interaction focusing primarily on communication and learning. This study has emphasized the importance of interaction; furthermore, the study also revealed that culture is enacted through interaction. Culture is used by

human beings for identification purposes, essential for the multitudes yet of little use for an individual that is locked away with no contact with others; evidence that it is something we need for identification and sensemaking of our environment. In the analysis, I identified two areas where we could see how culture is manifested in practice, those being through communication and learning. Both of these are imperative towards interaction and essential for successful collaboration and yet they are highly influenced by manifestations of culture; individuals are just not aware of what contextual cues to look for and/or if they are focused on perceiving a specific context through their own way, what they construe to be 'normal' behaviors for such a context. The purpose of the re-education is to navigate away from an over emphasis on National cultural differences and more towards creating contextually recognized cues that are universally recognized in the Grundfos Global R&D Network to replace those that individuals may come with; specifically geared towards communication and language.

13.6.1.2 Networks

The second component this study has identified as significant to the collaboration processes of international R&D activities in Grundfos is that of networks. It was a natural choice as networks are such an integral part of Grundfos and more specifically of their R&D activities, therefore, identifying what the thoughts on the Grundfos Global R&D Network were and identifying what obstacles if any could improve collaboration was a necessary step in answering the primary research question. Here again as in the culture component, individual and their interactions have been identified as an essential aspect of networks. This is emphasized in my two-part definition for understanding intra-organizational knowledge networks where I define networks first as human created frameworks for understanding interaction and secondly, I focus on the need to develop relationships through continuous interaction as these strengthen relational bonds and through these create opportunities for trust to develop. Furthermore, this study has identified four key purposes/roles that I believe are strong reasons why it is relevant to acknowledge networks and how it is understood in organizations for the improvement of collaboration for Grundfos R&D. Proposition 3-6 restated in the table below first identified in PART I of the analysis in Chapter 12.2 acknowledge both definition as well as the four key purposes.

Table 29- Review of Proposition 3- 6 Regarding Networks' Role in improving collaboration

<p>Proposition 3:</p> <p><i>Networks are driven by the interactions and the relationships of network participants.</i></p> <p>Proposition 4:</p> <p><i>The establishment of roles and purpose, gaining access to the right information and people, participation in relevant network activities and relational interdependency are necessary for successful network usage.</i></p> <p>Proposition 5:</p> <p><i>Network participants in the case of Grundfos R&D should be understood as knowledge workers.</i></p> <p>Proposition 6:</p> <p><i>Role clarification is necessary when the structure is complex and the size of the network is as large as it is now and aimed at a continual increase in the years to come. Reestablishing continuous clarification of employee and managerial roles will facilitate the alignment and interpretation of strategic initiatives.</i></p>

As previously stated this study has identified Four Key Purposes/Roles for Successful Network Collaboration.

The first key purpose/role is the achieving task completion with a focus on role clarification and competency development. Through proposition 5 and 6 that fall under this first purpose/role we begin to understand the importance of context and perception on the environment. For example, proposition 5 encourages management to refocus how the role of engineers is understood both by management but also by engineers themselves from engineers to knowledge workers. Making this distinction clear will create common ground for network participants across the Global R&D Network. This distinction in roles provides colleagues located outside of Denmark an opportunity to understand in a more explicit way what is required of them and by default it will emphasize autonomy-inter-dependence relationship through highlighting the importance of the network structures, meetings and developing relationships for work task completion and long-term business development. The first key purpose also addresses intra- and inter- personal competencies through the development of high capacity learners as well as the development of network competencies specifically targeted towards Grundfos R&D network members as the data made it quite clear that developing network relationships would facilitate task completion and network development.

The second key purpose/role is gaining access to information and knowledge with a focus on developing relationships and trust. While it may seem self-evident that one of the key purposes/roles of networks is to gain access to information it seems to have been taken for granted and replaced with other seemingly more important priorities. When identifying these four key purposes I wanted them also to be quite basic or common sense. Gaining access to the right information and the right people is just that basic and yet essential for optimal network usage. The data tells us that knowledge is carried amongst people, that network participants need to build relationships for successful work completion and that trust is essential for exchanging information and knowledge with foreign colleagues. The analysis reviews the difference between relational vs.

physical proximity and how this affects access to information as well as the opportunity to build trust. In other words network participants need to develop relational proximity that supersedes physical proximity so that no matter where network participants are that they can call on these individuals and based on the strength of those relational bonds these relationships can facilitate work processes through smooth collaboration and a shared vision.

The third key purpose/role is developing relationships with a focus on four essential underlying aspects: mutual interests, credibility, influence and trust. This study has identified that relationships are essential for the success of these types of networks because as stated in the analysis these networks focus on both autonomy and inter-dependence. This means that network participants have to think of their needs as well as their role in the network and how this compares to the organizational goals. Developing a successful work profile in the network has a much to do with how you work independently as well as how you work well with others. Therefore, the above four aspects of relationship development in these types of networks were identified as developing mutual interest with other network participants provides network participants with the opportunity of work success and developing of relationships and through these relationships, opportunities for trust. The other aspect of developing relationships in these networks is the need to 'walk the talk' and this means that network participants need to be credible as well as influential so that they can further develop their brand and expand their network.

The fourth key purpose/role is participating in network activities with a focus on creating meaningful opportunities for the other three key purposes. Participation is essential for interaction, for developing relationships, for identifying areas of mutual interest and for creating common ground amongst network participants. Thus management has the keen role of understanding the needs of network participants before they do perhaps and creating meaningful opportunities for network members to participate so that they can work on the other key network purposes/roles; namely, role clarification and competence development, access to information and developing network relationships.

13.6.1.3 Individuals and their Interactions

The third component this study has identified as significant to the collaboration processes of international R&D activities in Grundfos is that of individuals and their interactions. This component was also a natural choice based on the data as individuals and their interactions are such an integral part of Grundfos and are necessary for the network structure to exist and function properly. The business literature focuses mainly on process improvements and tends to explore areas such as communication, organizational behavior or industrial psychology when it deals with individuals. Exploring this component was about considering first and foremost the organizational context for Grundfos R&D so as to gain an understanding of the individuals in these networks, how individuals are understood, what is expected of them and what expectations they come to these networks with; in essence, recognizing the incredible unrealized value that is waiting to be applied. Given how the data continually addressed the importance of individuals and their interactions for the R&D networks, my aim, when approaching the literature was to identify how to gain an understanding of individuals and their interactions as a primary component and not a supplemental aspect of networks as has been the case in the primary literature on networks. My explorations of the literature substantiates the innate need individuals have to be relational; individuals interact not

only to fulfill basic needs but also to build relationships that identify mutual interests and through these help validate and re-affirm identities and acceptance into social groups.

For the purposes of this study I identified a simple two part understanding of individuals and their interactions as there can be many ways of understanding individuals. The first part of this definition is proposition 7 restated in the table below first identified in [PART I](#) of the analysis in Chapter 12.3 presents how .

Table 30- Review of Proposition 7 Regarding how to understand Individuals in complex knowledge networks

Proposition 7:

Experiences, needs and emotions are three basic yet fundamental aspects of an individual that are highly significant in explicating individuals and their interactions.

The first part of understanding individuals for improving collaboration in these networks is simplifying the way we define individuals. For the purpose of this specific case and cases like it, the data revealed *experiences, needs and emotions* are highly informative both in intra- as well as inter-personal dynamics rather than traditional personality theories as personality can also be too categorical in an interpreted/ constructed setting as it is when individuals are making sense of their context and interactions. This proposition considers the dynamic environment. Experiences build up how individuals understand and interact with the world, needs as explained under culture above should be thought of as a catalyst for strengthening and focusing relational ties; not just your needs but what your colleagues needs and the totality and this includes considering the future of the relationship in interaction. Lastly, emotions are also fundamental in how individuals understand interaction and prioritize their interactions. Creating an awareness of these three basic yet fundamental underlying aspects of interacting individuals will I believe enable individuals to be better prepared to make more educated decisions and reflect and learn from their experiences.

The second part of understanding individuals for improving collaboration in these networks is recognizing the significance of cognition and interaction in understanding network processes. This study emphasizes the importance of identity and perception in both understanding individuals and their interactions as both identity and perception help us understand the internal and relational reasoning mechanisms for how individuals make sense of their environment. A focus on identity serves two roles for individuals communicating what is important to them given the context; they are sharing a part of themselves. The other role of identity is that helps others understand an individual; is should be more accurate than using national culture dimensions for instance. Here the very individual is providing you contextual cues for how they want to be understood, perceived, etc., essentially providing the opportunity to improve interaction. Perception also facilitates the improvement of interaction through creating an awareness of contextual cues; perceptual readiness provides individuals with moments of reflection to re-assess situations in order to make a more informed decision.

As stated in the analysis the associative nature of individuals encompasses all three components-culture, networks and individuals and their interactions and as the data has stated, individuals in these networks are carriers of knowledge. The basis for network relationships to develop is a mutual purpose or interest that sparks the desire for collaboration that is born out of a need for one another and a desire to trust. Thus, in order to be innovative individuals have to share, discuss and bring together their individual unique insights through interaction and more intimately through relationships to achieve collaboration.

Grundfos R&D aspires to be a global innovative organization. However, this is a perfect example of why I have set focus on the individual and their interactions. There is a duality in this kind of context. I briefly identified it, in the analysis, this yin and yang relationship between autonomy and inter-dependence needed in these networks. This can be difficult to completely understand and can be easily replaced with thoughts of upcoming deadlines and meetings. It is the individual's job to realize that they are dependent on one another. In many respects, their work is based on working together in teams, projects, across different functions and departments. It is this inter-dependence that promotes an environment where new concepts and new knowledge is able to manifest itself. This study emphasizes that the context has evolved for R&D activities but how we manage this new context has yet to be truly recognized. By identifying the importance of the individuals participating in these networks and identifying what they need to succeed in such an environment is definitely what I believe to be a step in the right direction towards improving collaboration processes and learning how to manage these complex networks.

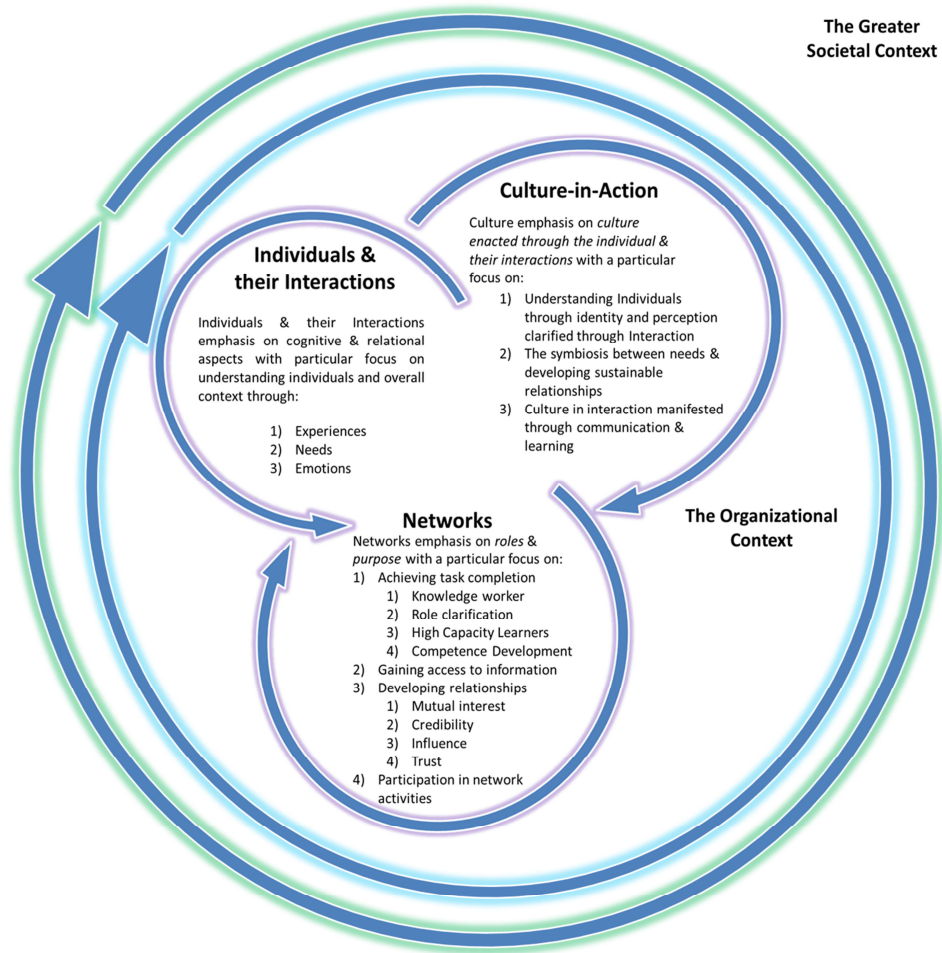
Based upon the above reflections regarding the main research question we can revisit the conceptual framework presented in chapter 4 and reconsider the organization of the components. Instead of using a triangle where each component has 'equal significance perhaps we should reconsider the source of it all is the individual and their interactions, as has been the outcome of the review and analysis of each component for improving collaborative processes for intra-organizational multi-national knowledge networks such as the Grundfos Global R&D Network.

The first component Culture revealed that culture is enacted through interaction, represented by a focus on the micro-practical level in organizations where the dynamics of interaction play a significant role in how individuals define themselves and understand their context as well as others in it.

The second component Networks revealed that networks in this context exist as a by-product of individuals and their interactions. Networks are constructed out of the needs and purpose of the organization, but in this context, where autonomy is a predominant characteristic of the organization, networks are constructed based on the perceptions and understandings of individuals in action and interaction.

The third component Individuals and their Interactions revealed how we can understand individuals and their interactions in this context without crossing over into psychology. Retaining the focus on organizations is key at a micro-practical level as evident from the data collected in this study.

Figure 58- Revisiting the Conceptual Framework with New Found Knowledge & Understanding



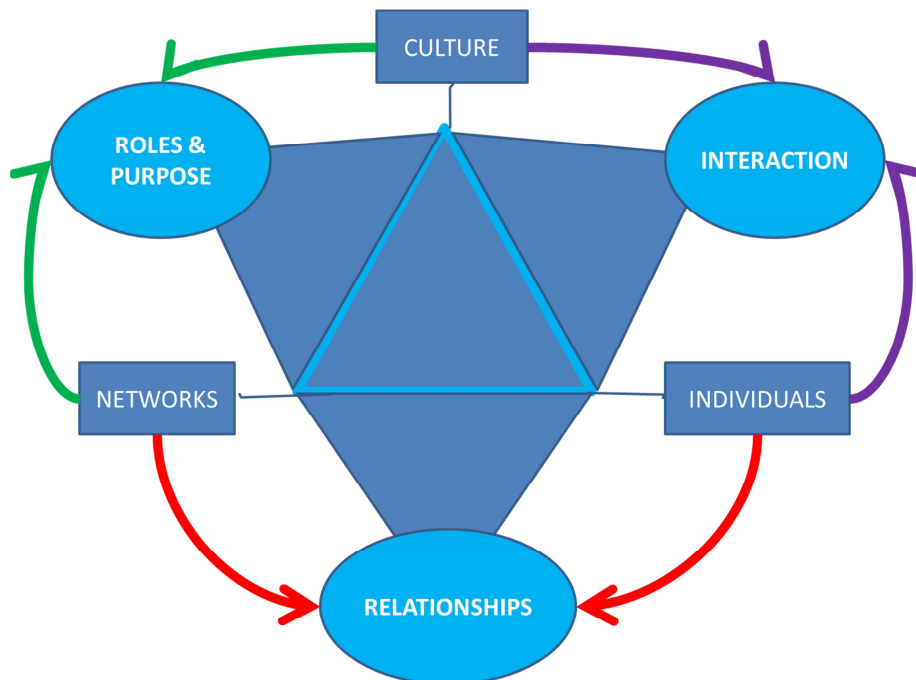
13.1.2 The Sub-question 1: How do the most influential components interact?

Sub-question 1 explores the environment for the inter-relationships. What factors are likely to influence the interrelationships and what impact are these factors proposed have.

In PART II of the analysis I focused on the components' inter-relationships and how these impact improving collaboration. I identified the inter-relationships as such and are illustrated in the figure below:

- Culture & Individuals exposes and emphasizes **Interaction**
- Culture & Networks exposes and emphasizes **Roles & Purpose**
- Networks & Individuals exposes and emphasizes **Relationships**

Figure 59-Inter-relational aspects of Collaboration for Grundfos R&D Network



13.6.1.4 Interaction: Culture & Individuals

The emphasis here is on culture affecting cognitive processes and through these how it also affects social processes, including but not limited to communication, language, and how we understand and perceive our context. Moreover, how individuals learn, how individuals become motivated and what individuals consider to be a need at any specific point in time.

Interaction is the linking force between culture and individuals. Interaction is also the linking action between individuals within networks; it is an essential step in the process of collaboration. Interaction provides individuals opportunity for clarification, for information gathering, for

assessment of previous experiences and alignment of possible mutual interest and last but certainly not least, interaction provides individuals with the opportunity to strengthen relational bonds enabling for the development of trust.

This study further revealed the following five key aspects of interaction in networks:

- The development of mutual orientation is necessary
- The frequency of encounters where the outcome is positive will pave the way towards more frequent and perhaps deeper interaction
- Opportunity for participation as well as willing participants is also necessary
- Adaptability is necessary in negotiating meaning creation, developing and evaluating relationships
- Giving and receiving of information is necessary (Access and willingness to share)

These key aspects make the understanding of interaction more tangible and make it easier to translate them into organizational practices. From a managerial perspective the focus should be on developing purposeful activities that promote positive interaction. While from an employee perspective the focus should be on developing intra- and inter- personal awareness such as the four social process techniques discussed in Chapter 11 under PART III: perceptual readiness, sensemaking, self-monitoring and social comparison theory. Additionally, the concept of high capacity learner expanded upon in PART I of the analysis in Chapter 12 under networks where the focus is on developing characteristics such as open, influential, credible, context-focused, needs driven and yet relationship-based. Overall, it is a focus on the development of knowledge based on sharing and exchanges through interaction; these are based on the long-term investment of Network members on one another. It is as expressed through one of my suggestions, flipping the 'What's in it for me?' mentality so that the focus becomes re-centered on the organizational goals rather than on individual goals.

13.6.1.5 Roles & Purpose: Networks & Culture

This study has identified that both network structures as well as the concept of culture need roles and purpose to facilitate smoother work processes for individuals. As explained in the analysis Chapter 12, I identified four key purposes/roles of networks for improving collaboration. These four purposes are focused around improvement development for both people and processes. As already mentioned culture is used as an identifier to place individuals and other contextual cues into cognitive maps for understanding a given situation. And as already explained the tendency in business has been to focus on national culture dimensions, however, that these limit the scope of interaction. Thus, it would make quite a substantial improvement for understanding culture in the network if we take into consideration the already outlined four key purposes/roles discussed under the analysis for networks. Furthermore, I would also consider the three identifiers of culture in organizations revealed through the literature review in the Culture Chapter, founder effect, boundaries and the organizing metaphor effect, for better understanding the concept of culture in organizations. These three factors also create organizational frames of reference for understanding the why and how of culture in Grundfos R&D. Together both understandings provide the necessary understanding for the what roles and purposes should be in focus to improve collaboration and achieve long-term organizational goals.

13.6.1.6 Relationships: Culture & Networks-

The Grundfos Global R&D network is both a relationship and long-term focused network. The yin and yang of autonomy and inter-dependence of network participants convenes at relationships. This study has identified the need for the development of relationships for the improvement of collaboration for the successful achievement of long-term organizational goals. Earlier in this conclusion I reviewed the concept of culture and how in this study culture needs to be reconstructed with a focus on the individual as—culture in action. A focus on individuals and the development of relationships based on individuals' interactions creates the opportunity to improve cultural understanding through reassessing of mutual interests, strengthening relational bonds, creating common ground and developing trust to name a few.

PART II of the analysis also presented the importance of relationships for networks to be successful at fulfilling the four key purposes/roles; achieving task completion, accessing information, developing relationships and participating in network activities. The emphasis here is the need for inter-dependence, for reciprocity, for trust in sharing. These findings add new contributions towards the understanding of relationships in intra-organizational multi-national knowledge networks by addressing the *how* and *why* of the importance of relationships.

Particular emphasis is placed on the network participants' *credibility* and *influence* in network dealings. As this study suggests that collaborative work is intimate in the sense that it occurs in long-term focused, relationships. The data has been clear that trust enable access to information and eases exchanges and interactions. Credibility and influence also smooth the process of developing trust as they show other network participants that an individual is already trusted by others. These two network valuations are achieved through successful peer-evaluated participation in network activities as well as formal work tasks. So, we could conclude by stating that the independent aspects of work tasks, such as expertise, provide the value that will enable trust among the network to further develop the inter-dependent aspect for use in relationship building. And these relationships that are built will continue to thus gain in further personal and professional development for individual network participants. Without relationships the work would be limited in its reach and robotic in its approach. The next step is equipping all network participants with the right tools so that they are well-prepared to navigate the networks.

13.1.3 The Sub-question 2: What are the combined effects of the components on collaboration and outcomes subsequently?

Key Contributions & Practical Implications

Sub-question 2 considers the answers from the Primary Research question and sub-question 1 together with all pertinent impressions from the data and the extant theories examined to consider what the best process of inter-relationships for the best collaboration and therefore best outcomes could be. In other words, how can the overall set of interrelationships be improved to assist the Grundfos in improving the management of their international R&D activities through the Global R&D Network.

This study has identified that while the context for R&D activities in Grundfos has changed the internal processes and general understanding of the underlying dynamics necessary for these activities to smoothly function have not changed. Therefore, this study concludes that the combined effects of the components and their inter-linking concepts require a change in the management of R&D activities focusing on the individuals and their interactions.

This study has identified and proposed a new conceptualization of culture in organizations. This new perspective provides the organization and its management the necessary focus on the intra- and inter-personal dynamics that are prevalent in these types of networks. Moving away from national culture dimensions and replacing these with a focus on culture in action through 1) the individual in culture, i.e., identity and perception, 2) individuals in interaction, i.e., identifying needs as catalyst for relationship management and 3) culture in interaction, i.e., focusing on the practical manifestations of culture in practice through two specific aspects of interaction, such as, communication and learning. These new findings with a focus on the individual and interaction also work together with the contributions for the network component.

This study also acknowledged that networks in this context are driven by the individuals and their interactions therefore it was necessary to reevaluate the organizational aims for the network. In this case, I identified four key purposes/roles of networks for the successful improvement of collaborative processes: 1) achieving task completion through role clarification and competency development, specifically the competency of high capacity learner and networking in R&D, 2) gaining access to information and other individuals through the development of relational proximity, 3) developing relationships as relationships facilitate the development of mutual interests that enable the development of strong relational bonds and the development of trust, which nurtures the relationship and 4) the development of and participation in network activities that promote all three of the above purposes.

Both the culture and network components emphasize the importance of individuals and their interactions therefore this study also explored and identified particularly for this context, how individuals should be understood and what new contributions could facilitate improvements in collaborative processes. This study identified that individuals have not been the focus of business literature as seen in the review of the network literature, however the context and the data further emphasized their importance. Therefore, this study explored and revealed a new understanding of individuals for these types of networks where both high levels of autonomy and inter-dependence are characteristic of the environment, where the focus is not long-term collaboration and developing innovative solutions based on the shared expertise. This understanding is a two-part understanding of individuals and their interactions. First, how we define individuals is looking at three basic but fundamental aspects 1) their experiences, 2) their needs and 3) their emotions. Secondly, the dynamic between the cognitive and relational aspects of individuals and how these affect the way they interact, perceive and understand the world around them.

This study also identified that culture is used as an identifier that is why national culture dimensions have been so successful since they fit right into the cognitive maps individuals use to organize their environment. Realizing this releases the need to use national culture characteristics to identify

others, instead allowing others to share how they want to be understood. This also allows for a greater focus on the relational associations to develop.

Up until now the literature on networks really does not delve into the what or how of developing meaningful, necessary network relationships. Through this study, I have identified that one needs credibility. In exploring the concept of networks and individuals the data revealed that relationships play a significant role in how individuals use networks. The three interlinking concepts: interaction, roles and purpose and relationships all work together to facilitate how networks should be used by individuals and how individuals understand their context as well as the one another all for the improvement of collaboration.

This study has also created an awareness for the importance of roles and purpose in these types of networks and that these also facilitate culture in action by providing other forms of identifiers, rather than national culture characteristics for individuals to make sense of their environment. The identification of roles and purpose for the network as a whole as well as the various groups and the individuals provides frames of reference that provide the opportunity for the development of relationships and through these the develop of trust and the improvement of collaborative process.

Overall a focus on interaction, context and cognition are critical for retaining a continued focus on the company's agenda for the R&D Network and its activities and improving collaborative processes. All of the findings and points presented above have been further development in the analysis and through under the suggestions section.

This study has identified an emphasis on individuals and their interactions and therefore, management should maintain a focus on the importance of the long-term effect of the relationships (relational significance), the relevance of relational proximity and the importance of further developing it so that it transcends physical proximity. The focus on interaction and developing relationships is essential for the network, because it is here that individuals have opportunities to develop trust, gain access to information, and further expanded understanding roles and purposes of the network and of the organization as a whole. Therefore it is important for management to develop meaningful activities that provide individuals with the opportunity to interact and further develop their relationships which will develop their professional competencies as they share their expertise and experiences through stories. It is this focus on the individual, on interaction, on relationships and intra- and inter-personal dynamics that will facilitate improvements on the collaborative processes in intra-organizational multi-national knowledge networks such as the Grundfos Global R&D Network.

13.2 The Methodological Journey

Methodological underpinnings in review

This section serves two main purposes. It provides me, the researcher the opportunity to reflect upon the entire journey and express, indeed how the methodological choices have been the best ones for this study and how these choices have facilitated the development of most value for both the organization as well as for academia. Secondly, through the above process, this section provides the reader methodological closure, as this project has been complex with its use of three methodological approaches and deep qualitative research.

The phenomena have been the guiding force for determining the applied methodological stance of the study. The focus on individuals and their interactions and on the context of networks that is highly reliant on interaction and relationship development paved the way for a qualitative research focus. Moreover, the exploratory nature of the research area together with the deconstruction of three major concepts, i.e., culture, networks and individuals and their interactions, also required a methodological stance that was as I described in the methodology Chapter, able to 'weave back and forth between local context and conceptualizing' (Padgett (2004:4), able to see both the bigger picture of the internationalization of R&D activities as well as the significance of the inter-connected concepts and how the intricacies of these affect the bigger picture. Lastly, in such a large exploratory study the 'parameters or dynamics of the social setting' (Miles and Huberman (1994:35) are not initially identifiable, thus it is necessary to cast a wide net and let the data slowly guide the research.

For this study I have also chosen to apply a multi-perspective approach as I believe it will serve to gain the most value for the development of theory and its practical applications. A multi-perspective approach can truly expose the multitude of realities that are "lived" in the organization. It is as Hatch (2006) states, "we must master the use of multiple perspectives, for it is in bringing a variety of issues and ideas to the intellectual table that we will learn how to be both effective and innovative in our organizational practices". The three approaches used in this study are 1) case study, 2) action research and 3) grounded theory. Under the methodology Chapter 2, I presented each of the approaches and table 4 presents an overview for each primarily focusing on the following five areas: 1) researcher approach, 2) key characteristics, 3) data collection, 4) data analysis and 5) expected outcomes. Reaching the end of the study, as I take a reflective stance, I still consider each approach a contributing and essential aspect of the study; however, I can see how each approach takes up different roles within the process and by applying a multi-perspective approach it has allowed the strengths of each approach to come together building what I believe is a strong foundation for this qualitative study. I will elaborate below.

13.2.1 Case Study approach

The research questions are explanatory, explorative and reflexive type of questions. These types of questions lend themselves more towards case study as they require in-depth study of the phenomena. For the purpose of this study the case study research approach, which is typically used in qualitative research, allowed me to focus on the case of Grundfos R&D, functioning as a frame for the research. It allows for a story to develop where all three phases of the study exploratory, descriptive and explanatory evolve. Furthermore, the three forms of data collection in this study 1) interviews, 2) participant observation and 3) documents as source of secondary data are used to explore and identify the "contemporary events", essential for further developing the story of Grundfos R&D.

The case study approach adds value by allowing the researcher to follow the phenomenon, contributing to our understanding of the complex social phenomena. It allowed me to retain the rich data in context instead of sporadic bits and pieces; providing the opportunity to gain an understanding of the parts as well as the whole. The case study approach also provided a framework for understanding how to build up the research design allowing me to understand the boundaries for this study, how to construct the research questions, conduct a thorough literature review and developing the story of the case company by writing a case presentation. I was able to understand

how to focus on, prepare and collect the case evidence. However, the moment I began to organize and analyze the data this approach fell short of providing the necessary in-depth insights to that process and therefore the strengths of the grounded theory approach began to shine through.

13.2.2 Grounded Theory (GT) approach

For the purpose of this study the Grounded theory (GT) research approach allowed me to focus on the phenomenon using the data collected to guide the development of the components, their inter-relationships and any additional supplemental concepts in the case of Grundfos R&D. GT functioned as a tool for investigation, discovery, evaluation and identification for this research; it allowed for the development of theoretical conceptualizations based on the identification of emergent topics together with my interpretations, understanding and analysis of the phenomenon with a focus on seeing this setting through the eyes of the people being studied.

The Grounded theory approach adds value for qualitative research such as this study, where there is a high exploratory need to allow the case environment and participants to share their unique stories, where there is a high involvement between the researcher and the case company, as the researcher needs to convey their impressions not just as part of the case narrative but also interpret these into conceptualizations for a better theoretical understanding of the case context. Grounded theory's focus on coding is desirable in a study such as this one where the focus is on letting the data and phenomena guide the development of theoretical concepts. Moreover, it is the close interaction with the case company and the desire to provide improvements based on this study that makes GT a good choice of approach; starting from an inductive approach and applying GT contributes to the development of applicable and relevant suggestions as well as the theoretical contributions to the extant literature. This close relationship with the case company is the reason why I also chose to use the Action Research approach in this study as both case study and GT are not substantial in their own right to fully express this research experience.

13.2.3 Action Research approach

The action research approach is a collaboration of co-created meaning between the researcher, the research participants and the research environment. Action research follows iterative cycles and aims at invoking change in the studied setting. The action research approach functioned as facilitation tool between me, the company and its participants and it assisted in understanding, conceptualizing and reflecting throughout our interactions. Action research in its purest sense requires radical change, however, in this study the focus and purpose of the approach was more on the processes rather than outcomes, even though deliverables were provided at times, the main aim has been the conclusion and results of the overall study. As the study is inductive and qualitative the new knowledge and key contributions could not have been identified along the way, therefore, a pure action research approach would not have satisfied the aims of this study, hence the other two approaches.

13.3 Limitations & Future Research Directions

The above reflective discussion on the methodological stance and the use of a multi-perspective approach leads us into the final and concluding section of this study, the limitations and future research directions. These are discussed in light of the key contributions of this study and their

practical implication concluded in section 13.1 of this chapter, particularly when answering sub question 2. The following table summarizes the key contributions.

Table 31- Summary of Key Contributions, Academic and Practical Implications

Key Contributions	Academic Implications	Practical Implications
Importance of relationships in these types of networks	Network literature does not truly explore individuals or intra-organizational context thoroughly. (Kilduff and & Krackhardt 2008:14)	The revelation of the importance of relational and physical proximity and its impact on the development of network relationships in global networks
Focus on the balance and symbiosis of needs and relationships	The business literature mentions strategic and selfish dealings in B2B network relationships. The literature has not explored these types of networks and thus there does not exist any literature on this proposition.	Managers need to focus on how to develop individuals' intra- and inter- personal dynamics. Project managers need to develop an environment where the opportunity for positive interactions leads toward the identification of mutual interests and the development of trust between network participants.
Understanding culture through the individual	Culture has focused on national culture categories and has not truly embraced the ambiguity and diversity (Alvesson, Martin, Holden etc.). The literature also tends to view organizational culture from an anthropological view.	Culture in organizations is about context and purpose. Culture in organizations is much more complex in that it is propelled by a visionary (company founder) with a specific goal in mind and developed by human dynamics
Understanding the self both cognitively and socially- self-awareness of identity and behavior and interpretation or understanding of said behavior.	The literature moved the individual from the business literature over to industrial psychology and/or organizational behavior. However, this study contests that in these networks the individual and their interactions is core and therefore, they cannot simply be removed. Rather we need to further study individuals, their interactions and the implications to business in-context.	Focus on individuals and their Interactions in business translates a focus on the following: <ul style="list-style-type: none"> • Identity and perception • Sensemaking • Communication and language • Learning and knowledge • How we understand

The above table provides a more condensed summary of the key contributions and how these may affect both the extant literature and practitioners.

Through its iterative processes, intimate proximity to the researched setting and an inherent collaboration for the development of not only new knowledge but also the development of practical and useful improvements for Grundfos R&D this study focused on first and foremost letting the data

speak. This concentrated focus on developing research from practical issues has clear strengths and weakness as well as limitations and opportunities.

The rich qualitative research design provided a wealth of themes, concepts and highly recognizable rewards, however, it too had disadvantages, primarily the lengthy, seemingly unending analyzing processes, and considerable heavy decisions regarding which themes to pursue and understand the underpinnings for these research decisions.

Such a study focuses on the collaboration between academia and business and how both can gain from conducting such research. The benefits of such a collaboration range from access and support for the researcher which is difficult to come by and an in-depth and thorough exploration of the organizational issues that should result in constructive feedback and suggestions for improvement. However, research is long-term focused and business by nature tends to be short-term focused, thus these underlying drivers can cause frustrations and limitations as to what is expected and what is actual, in other words, researchers must understand that while access is granted and support given, the aim of the organization and its members is not focused on the study. This requires patience, strategic planning and a huge amount of flexibility. In the same vein, managers need to understand that researchers are not consultants and are focused on theoretical developments and only through these, do the revelations of practical applications and improvements present themselves.

From a Grounded theory perspective, as Glaser has often noted when conducting such in-depth coding analysis, it can put a strain on the researcher as one becomes personally invested in new theoretical developments, in other words, making it painstakingly difficult to know when to cut the proverbial cord and conclude the study. This study has covered a lot of conceptual territory and even now at the end of this study, I continue conceptualizing on what additional theoretical concepts and further developments of the identified components, concepts and themes could enhance the study's' contributions. Instead of dwelling on what could be further developed in this study, let us instead focus on what future research directions could be interesting and useful to focus on.

This study focused on a particular type of network: intra-organizational multi-national knowledge networks, such as in Grundfos Global R&D Network. Here the individuals and their interactions, autonomy, inter-dependence, and a long-term focus are essential for the network to successfully achieve organizational aims.

Based on the key contributions presented in the table above, I would have liked to further explore intra- and inter- personal skills as well as team dynamics, including the effects of in and out groups. I believe that further developing this study's contributions focusing on these areas can uncover underlying reasons for cognitive and relational dynamics that I believe would further improve collaboration in these types of networks. It would be interesting to continue exploring culture at the micro-practical level for complex organizational networks. Also, in light of the new knowledge it would be interesting to further explore the differences between multi-national knowledge networks and communities of practice (COP) and whether there could be some synergetic effects from combining some of the components identified here and some of the underlying principles of COPs.

Organizations like Grundfos that have a business and structure that depend on people's ingenuity to create, have a need, more than most, to nurture individuals and provide ways for individuals to get the best out of their relationships since these facilitate the success of their work (Compared to

traditional organizational hierarchy where roles are defined.) Grundfos could benefit from additional research that is both longitudinal and in depth but instead of focused on the whole network these should be conducted on small to medium sized knowledge networks within the overall Grundfos Global R&D Network that span across geographical and cultural distance, i.e., project groups. Given the context is organization theory this research should be aimed at gaining organizational improvements, however, this research should not be integrationist type research, it should be able to capture incongruities as well as ambiguities that can provide clues as to what should be given more considerations.

The way in which organizations understand culture, networks and individuals needs to change. There needs to be a shift from resource-thinking to relational and interaction thinking, what I would call a *micro-practical focus*, which is what is ultimately the primary 'currency' in these types of network structures now and for the future. These changes will release some of the tension in these networks providing much needed recognition of the context and the necessary tools for successful work task completion and the overall improvement of collaboration processes for intra-organizational, multi-national knowledge networks.

References

A

- Adler, N. J. (1983). A Typology Of Management Studies Involving Culture. *Journal of International Business Studies*, Vol. 14, No. 2, pp. 29-47.
- Adler, N. J., & Gundersen, A. (2008). Chapter 3: Communicating Across Cultures. *International Dimensions of Organizational Behavior: 5* (Fifth Ed. ed., pp. 69-95). Florence: Thomson South-Western
- Adler, P. & Kwon, S. W. (2002). Social Capital: Prospects for a New Concept, *Academy of Management Review*, Vol. 27, No.1, pp.17-40.
- Ailon-Souday, G., & Kunda, G. (2003). 'The Local Selves of Global Workers: The Social Construction Of National Identity in the Face of Organizational Globalization', *Organization Studies*, Vol. 24, No. 7, pp. 1073–96.
- Allan, G. (2003). A critique of using grounded theory as a research method, *Electronic Journal of Business Research Methods*, Vol. 2, No. 1, pp.1-10.
- Alvesson, M. (1993). *Cultural Perspectives on Organizations*, (1st ed.) Cambridge: Cambridge University Press.
- Alvesson, M. (2001). Knowledge Work: Ambiguity, Image, and Identity, *Human Relations*, Vol. 54, No.7, pp.863-886
- Alvesson, M. (2002). *Understanding Organizational Culture*, Thousand Oaks, CA: Sage
- Alvesson, M. and Deetz, S. (2000). *Doing Critical Management Research*. London: Sage.
- Alvesson, M. & Sköldbberg, K. (2005). *Reflexive Methodology: New vistas for qualitative research*, London: Sage
- Alvesson, M., & Willmott, H. (2002). Identity regulation as organizational control: Producing the appropriate individual. *Journal of Management Studies*, Vol. 39, No. 5, pp. 619-644.
- Amabile, T. M., & Kramer, S. J. (2007). Inner Work Life: Understanding the Subtext of Business Performance, *Harvard Business Review*, Vol. 85, No. 5, pp. 72-83
- Anderson, J. R. (1995). *Learning and Memory: An Integrated Approach*. New York: John Wiley and Sons in Maier, Prange and Rosenstiel (2001) Psychological Perspectives of Organizational Learning, Chapter 1, in Dierkes, Berthoin Antal, Child and Nonaka (2001) Handbook of Organizational Learning and Knowledge, Oxford University Press, Oxford and New York, NY

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Argote, L., Ingram, P., Levine, J. M., & Moreland, R. L. (2000). Knowledge Transfer in Organizations: Learning from the Experience of Others, *Organizational Behavior and Human Decision Processes*, Vol. 82, No.1, pp.1-8
- Argyris, C. (1991). Teaching smart people how to learn. *Harvard business review*, 69(3).
- Argyris, C. (2009). *Integrating the Individual and the Organization*. (7th ed) New York: Wiley.
- Argyris, C., Putnam, R., & Smith, D.M. (1985). *Action Science: Concepts, Methods, and skills for Research and Intervention*. San Francisco: Jossey-Bass
- Argyris, C. & Schön, D. A. (1978). *Organizational learning: a theory of action perspectives*, Reading, Mass.: Addison-Wesley.
- Argyris, C. & Schön, D. A. (1996). *The Evolving Field of Organizational Learning*, Chapter 52, pp.935-955 in Burke, W. W., Lake, D. D., & P., Jill W. (2009.) *Organization Change: A Comprehensive Reader*, Jossey-Bass, San Francisco
- Ascalon, M. E., Schleicher, D. J., & Born, M. Ph. (2008). Cross-Cultural Social Intelligence: An Assessment for Employees Working in Cross-National Contexts, *Cross Cultural Management*, Vol. 15, No.2, pp.109-130
- Axelsson, B. & Johanson, J. (1992). Foreign market entry—the textbook vs. the network view, in Johanson and associates (1994) *Internationalization, Relationships and Networks*, Uppsala University, Stockholm, Sweden (p.208-210)

B

-
- Baba, M. L., Gluesing, J., Ratner, H., and Wagner, K. H. (2004). The Contexts of Knowing: Natural History of a Globally Distributed Team, *Journal of Organizational Behavior*, Vol.25, No. 5, pp.547-587
- Balkundi, P. and Kilduff, M. (2005). The Ties that Lead: A Social Network Approach to Leadership, *The Leadership Quarterly*, Vol.16, pp.941-961
- Ballisager, O. (2007) *Grundfos Book More than Pumps*, Bjerringbro, Denmark: Grundfos In-House Agency: Arco Grafisk A/S
- Barley, S. R., Orr, J. E. (1997). *Introduction: the neglected workforce*. In *Between Craft and Science: Technical Work in U.S. Settings* (pp. 1–19), Barley SR, Orr JE (eds). Cornell University Press: Ithaca, NY in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.
- Baron, R. A. (1989). Personality and organizational conflict: Effects of the Type A behavior pattern and self-monitoring, *Organizational Behavior and Human Decision Processes*, Vol. 44, No. 2, pp. 281-296 in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Baron, R. A., & Markman, G. D. (2000). Beyond social capital: How social skills can enhance entrepreneurs' success. *The Academy of Management Executive*, Vol.14, No. 1, pp. 106-116 in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Bartlett, C. A. and Ghoshal, S (1988) Organizing for Worldwide Effectiveness: The Transnational Solution, *California Management Review*, Vol. 31, No.1 pp.54-74, also in *The Internationalization of the Firm* by Buckley, P. and Pervez, G. (1999), London, Thomson Learning, Chapter 19
- Bartlett, C.H., Ghoshal, S. (2000): *Transnational Management, Texts, Cases, and Readings in Cross-Border Management*, International ed. McGraw Hill, Singapore, 2.
- Bartlett, C. A. and Ghoshal, S. (2001). *Managing Across Borders: The Transnational Solution*, Harvard Business Review Press; Second Edition
- Bartunek, J. M., Walsh, K., & Lacey, C. A. (2000). Dynamics and Dilemmas of Women Leading Women, *Organization Science*, Vol. 11, No. 6, pp.589-610 offered a perspective on [the different aspects required of leaders
- Bate, P. (1999). *Strategies for Cultural Change*, Butterworth Heinemann: Oxford pp.190
- Becker, H. (1982). Culture: A Sociological View. *Yale Review*, Vol. 71, pp.513-527.
- Bell, D. (1973). *The Coming of Post Industrial Society*. Basic Books: New York in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior, *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.
- Benedict, R. (1934). *Patterns of Culture*. Boston, MA: Houghton Mifflin Company.
- Berends, H., Boersma, K., & Weggeman, M. (2003). The structuration of organizational learning. *Human Relations*, Vol. 56, No. 9, pp. 1035-1056 in Johnston, Peters, Gassenheimer (2006) Questions about network dynamics: Characteristics, structures, and interactions, *Journal of Business Research*, Vol. 59, pp.945-954
- Berger, P. and Luckman, T. (1967). *The Social Construction of Reality: a treatise in the sociology of knowledge*, Penguin Publishers, London
- Berger, C. R. and Calabrese, R. J. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. *Human Communication Research*, 1, 99-112. in Gudykunst, William B and Kim, Y. Y. (2003). Communicating with Strangers: an approach to International Communication, New York, NY: McGraw-Hill.
- Bernstein, B. (1974). *Class Codes and Control: 1. Theoretical Studies towards a Sociology of Language*. Routledge & Kegan Paul, in Coser, R. (1975). The Complexity of Roles as Seedbed of Individual Autonomy in Coser (ed.) *The Idea of Social Structure: Essays in Honor of Robert Merton*, New York: Harcourt Brace Jovanovich. (p.256) in Granovetter (1983) *The Strength of Weak Ties: Theory Revisited*, Sociological Theory, Vol. 1, pp.201-233 (p. 204)

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Berscheid, E. and Walster, E. (1969). *Interpersonal Attraction* (pp.69-91) Reading, Mass.: Addison-Wesley in Granovetter, M. (1973). 'The Strength of Weak Ties', *American Journal of Sociology*, Vol. 78, pp. 1360–80.
- Bhagat, S. R, Kedia, B. L., Harveston, P. D, and Triandis, H. C. (2002). Cultural Variations in the Cross Border Transfer of Organizational Knowledge: An Integrative Framework, *Academy of Management Review*, Vol. 27, No. 2, pp. 204-221.
- Biggart, N. W., & Delbridge, R. (2004). "Systems of Exchange", *Academy of Management Review*, Vol. 29, No. 1, pp.28-49
- Birkinshaw, J., Brannen, M. Y. and Tung, R. L. (2011). From a distance and generalizable to up close and grounded: Reclaiming a place for qualitative methods in international business research, *Journal of International Business Studies*, Vol. 42, pp.573-581.
- Blau, P. M. (1964). *Exchange and Power in Social Life*, New York: John Wiley & Sons, Inc. in Hallén, Johanson and Seyed-Mohamed (1991) Interfirm Adaptation in Business Relationships, *Journal of Marketing*, Vol. 55, No.2, pp.29-37
- Blau, P. M. (1991). Multigroup affiliations and complex role-sets. *Social roles and social institutions: Essays in honor of Rose Laub Coser*, pp. 37-51 in Cott, Cheryl (1998) Structure and Meaning in Multidisciplinary Teamwork, *Sociology of Health and Illness*, Vol. 20, No. 6, pp.848-873
- Blumer, H. (1986). *Symbolic interactionism: Perspective and method*. University of California Press in Weick, K. (1995). *Sense-making in Organizations*, Sage Publications: California, USA.
- Bodenhausen, G. V. (1990). Stereotypes as judgmental heuristics: Evidence of circadian variations in discrimination. *Psychological Science*, 1(5), 319-322 in Fiske, Susan T (1993) Social Cognition and Social Perception, *Annual Review Psychology*, Vol. 44, pp.155-194
- Boland, R. and Tenkasi, R. (1995). Perspective making and Perspective Taking in Communities of Knowing, *Organization Science*, Vol. 6, pp.350-372 in Nahapiet, J. and Ghoshal, S. (1998) Social Capital, Intellectual Capital and the Organizational Advantage, *The Academy of Management Review*, Vol. 23, No. 2, pp.242-266
- Borgatti, S. and Foster, P. (2003). The Network Paradigm in Organizational Research: A Review and Typology, *Journal of Management Review*, Vol. 29, No. 6, pp.991-1013
- Borge-Holthoefer, J. and Arenas, A. (2010). Semantic Networks: Structure and Dynamics, *Entropy*, Vol.12, pp.1264-1302
- Borghoff, T., & Oliveira, M. (2000). *Competencies of Global Network Evolution: A knowledge Perspective*, Conference paper, EIBA 2000, Maastricht, 10-12, December in Todeva (2006) *Business Networks: Strategy and Structure*, Routledge: New York, p.5
- Bourdieu, P. (1986). *The Forms of Capital*, in Richardson, J (ed.) *Handbook of Theory and Research for the Sociology of Education*, pp.241-258, New York: Greenwood, in Nahapiet, J. and

- Ghoshal, S. (1998). Social Capital, Intellectual Capital and the Organizational Advantage, *The Academy of Management Review*, Vol. 23, No. 2, pp.242-266
- Bourdieu, P (1993). *Sociology in Question*. London: Sage in Nahapiet, J. and Ghoshal, S. (1998). Social Capital, Intellectual Capital, and Organizational Advantage, *Academy of Management Review*, Vol. 23, No. 2, pp. 242-266
- Boutellier, R., Gassmann, O., and Von Zedtwitz, M. (2008). *Managing Global Innovation*, Springer-Verlag: Berlin Heidelberg
- Bowen, G. (2005). Preparing a qualitative research-based dissertation: Lessons learned, *The Qualitative Report*, Vol. 10, No. 2, pp. 208-222
- Boyacigiller, N. A., Kleinberg, M. J., Phillips, M. E., & Sackmann, S. A. (2002). Chapter 5: Conceptualizing Culture: Elucidating the Streams of Research in International Cross-Cultural Management. *Handbook for international management research* (pp. 99-167). Cambridge, Mass.: Blackwell Business
- Bramel, D. (1969). Interpersonal Attraction, Hostility and Perception, in *Experimental Social Psychology*, edited by Judson Mills. pp.9-16 New York: Macmillan in Granovetter (1973) The Strength of Weak Ties, *American Journal of Sociology*, Vol. 78, No.6, pp.1360-1380
- Brannen, M. Y. and Salk, J.E. (2000) Partnering Across Borders: Negotiating Organizational Culture in a German-Japanese Joint Venture, *Human Relations*, Vol. 53, no. 4, pp.451-487.
- Brickson, S. (2009). *Organizational Behavior: Organizational Identity Orientation: Making the Link between Organizational Identity and Organizational Behavior*, PhD Dissertation, Harvard Business School
- Brown, J. S., & Duguid, P. (2001). Knowledge and Organization: A Social-Practice Perspective, *Organization Science*, Vol. 12, No. 2, pp.198-213
- Brown, R. (1965). Social Psychology, New York: Free Press, pp.71-90 in Granovetter (1973) The Strength of Weak Ties, *American Journal of Sociology*, Vol. 78, No.6, pp.1360-1380
- Bonsor, K. (2004). "How American Football Works" 15 January 2004. HowStuffWorks.com.
- Brück, F., & Kainzbauer, A. (2009). The Contribution of Autophotography for Cross-Cultural Knowledge Transfer, *European J. Cross-Cultural Competence and Management*, Vol. 1, No.1, pp.77-96
- Brummans, B. H. J. M., & Putnam, L. L. (2003). New directions in organizational culture research: A review of Martin's "Organizational Culture: Mapping the Terrain" and Alvesson's "Understanding Organizational Culture." *Organization*, 10, 640-644.
- Bruner, J. (1947). Value and Need as Organizing Factors in Perception, *Journal of Abnormal and Social Psychology*, Vol. 42, pp.33-44

- Bruner, J. (1949). Perception, Cognition, and Behavior, *Journal of Personality*, Vol. 18, No. 1, pp.14-18
- Bruner, J. (1957). On Perceptual Readiness, *Psychological Review*, Vol. 64, pp.123-152
- Bruner, J. (1961). The Act of Discovery, *Harvard Educational Review*, Vol. 31, No.1, pp.26-28
- Bruner, J. (1966). *Essays for the Left Hand*. New York: Atheneu
- Bruner, J. (1990). *Acts of Meaning*. Cambridge: Harvard University Press
- Bryman, A. and Bell, E. (2007) *Business Research Methods*, 2nd ed, Oxford University Press: Oxford
- Buelens, M., Van den Broeck, H. & Vanderheyden, K. (2006). *Organizational Behavior*, 3rd edition, McGraw Hill Education: Berkshire, UK
- Burgess, R. G. (1984). *In the field*, London: Allen and Unwin, in Bryman, A. and Bell, E. (2007) *Business Research Methods*, 2nd ed, Oxford University Press: Oxford
- Burkhardt, M. E., & Brass, D. J. (1990). "Changing Patterns or Patterns of Change: The Effect of a Change in Technology on Social Network Structure and Power, *Administrative Science Quarterly*, Vol.35, No.1, pp.104-127 in Knoblen (2008) *Firm Mobility and Organizational Networks: Innovation, Embeddedness and Economic Geography*. UK: Edwards Elgar Publishing limited. (pp.39)
- Burrell, G. and Morgan, G. (1979). *Sociological Paradigms and Organizational Analysis: elements of the sociology of corporate life*, Hants: Ashgate
- Burt, R. S. (1992). *Structural Holes: The Social Structure of Competition*. Cambridge, MA: Harvard University Press in Parkhe, Wasserman and Ralston (2006) *New Frontiers in Network Theory Development*, *Academy of Management Review*, Vol.31, No.3, pp.560-568
- Byosiére, P., Luethge, D. J., Vas, A., & Paz Salmador, M. (2010). Diffusion of organizational Innovation: knowledge transfer through social networks, *International Journal of Technology Management*, Vol. 49, No. 4, pp.401-420

C

- Caldwell, D. F., & O'Reilly, C. A. (1982). Responses to failure: The effects of choice and responsibility on impression management. *Academy of Management Journal*, Vol. 25, No. 1, pp. 121-136 in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Callon, M. (1986). Some elements of a sociology of translation; domestication of the scallops and the fishermen of St Brieuc Bay, in Law (ed.), *Power, Action and Belief A New Sociology of Knowledge?* Routledge and Kegan Paul: London.

-
- Callon, M. (1987). *Society in the making: the study of technology as a tool for sociological analysis. The social construction of technological systems: New directions in the sociology and history of technology*, 83-103, in Bijker, Hughes, and Pinch, (eds.), *The Social Construction of Technological Systems, New Directions in the Sociology and History of Technology*, MIT Press: Cambridge, Mass
- Callon, M., Law, J., and Rip, A. (1986) *Mapping the Dynamics of Science and Technology: Sociology of Science in the Real World*, Macmillan: London
- Carlile, P. R. (2002). A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development, *Organization Science*, Vol. 13, No. 4, pp. 442-445
- Carter, P. & Jackson, N. (1987). Management, Myth, and Metatheory—from scarcity to postscarcity, *International Studies of Management Organization*, Vol. 17, No. 3., pp.64-89.
- Casciaro, T. (1998). Seeing things clearly: Social Structure, Personality, and Accuracy in Social Network Perception, *Social Networks*, Vol. 20, No. 4, pp.331-351 in Borgatti, Stephen and Foster, Pacey (2003) *The Network Paradigm in Organizational Research: A Review and Typology*, *Journal of Management Review*, Vol. 29, No. 6, pp.991-1013
- Chao, G. T., & Moon, H. (2005). The Cultural Mosaic: A Metatheory For Understanding The Complexity Of Culture, *Journal of Applied Psychology*, Vol. 90, No. 6, pp. 1128-1140.
- Charmaz, K. (1983). *The grounded theory method: an explication and interpretation*, in R. Emerson (ed.) *Contemporary Field Research: A collection of Readings*, Boston: Little Brown in Goulding, C. (2002). *Grounded Theory: A Practical Guide for Management, Business and Market Researchers*. London: Sage.
- Charmaz, K. (1990). Discovering Chronic Illness: Using Grounded Theory, *Social Science and Medicine*, Vol. 30, No. 11, pp.1161-1172
- Charmaz, K. (2003). Grounded Theory: Objectivist and Constructivist Methods, Chapter 8, in Denzin, N. K., and Lincoln, Yvonna S., (eds) (2003) *Strategies for Qualitative Inquiry*, Sage Publications: California
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*, Los Angeles: Sage
- Chatman, J. A., Bell, N. E., & Staw, B. M. (1986). The managed thought: The role of self-justification and impression management in organizational settings. *The thinking organization*, 191, 214 in Weick, K. (1995). *Sense-making in Organizations*, Sage Publications: California, USA.
- Child, J. (1998). *Strategies of Cooperation: Managing Alliances Networks and Joint Ventures*, Oxford University Press
- Child, J. (2001). Organizations Unfettered: Organizational Forms in an Information-Intensive Economy, *Academy of Management Journal*, Vol. 44, No.6, pp.1135-1148

-
- Child, J. & Faulkner, D. (1998). *Strategies of Co-operation: Managing Alliances, Networks, and Joint Ventures*, Chapter 6: Networks and Virutality, pp.113-142, Oxford
- Chow, W. S., and Chan, L. S. (2008). Social Network, Social Trust, and Shared Goals in Organizational Knowledge Sharing, *Information and Management*, Vol. 45, pp.458-465
- Cialdini, R. B. (1989). Indirect Tactics of Image Management: Beyond basking. In R.A. Giacalone and P. Rosenfeld (eds.) *Impression Management in the Organization*:45-56. Hillsdale: Erlbaum. In Kilduff and Tsai (2009) *Social Networks and Organizations*, Sage, pp.71 and in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: cognition, personality, dynamics and culture*, Cambridge University Press, New York, pp.2
- Claes, M. T. (2009) 'The linguistic shift in cross-cultural studies: culture in discourse', *European J. Cross-Cultural Competence and Management*, Vol. 1, No. 1, pp.66-76
- Clausen, L. (2006). Chapter 2: Intercultural Communication in Organizations: Theory. *Intercultural Organizational Communication: five corporate cases in Japan* (pp. 43-55). Kåge, Denmark: Copenhagen Business School Press.
- Coffey, A. and Atkinson, P. (1996) *Making sense of qualitative data: Complementary research strategies.*, Thousand Oaks, CA, US: Sage, in Bryman, A. and Bell, E. (2007) *Business Research Methods*, 2nd ed, Oxford University Press: Oxford
- Coghlan, D. and Brannick, T. (2005). *Doing Action Research in Your Own Organization*, Thousand Oaks, CA: SAGE.
- Conceição, P. and Heitor, M. V. (2007). Diversity and Integration of Science and Technology Policies, *Technological Forecasting and Social Change*, Vol.74, pp.1-17 in Ebrahim, Ahmed and Taha (2008) *Literature, Principle and the Basics of Network Value Create in R&D: The relationship with economy*, Department of Engineering and Design and Manufacture, Faculty of Engineering, University of Malaysia, Selected works of Nader Ale Ebrahim, June 2008, accessed and available at: <http://works.bepress.com/aleebrahim/32> (p.2)
- Cook, D. and Brown, J. (1999). Bridging Epistemologies: The generative dance between organizational knowledge and organizational knowing, *Organization Science*, Vol. 10, No. 4, pp.381-400 in Carlile, Paul R (2002) *A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development*, *Organization Science*, Vol. 13, No. 4, pp. 442-445
- Cooley, C. (1902). *Human Nature and the Social Order*, New York: Charles Scribner's Sons, (revised eds. 1922)
- Cooper, R., & Burrell, G. (1988). Modernism, Postmodernism and Organizational Analysis: An Introduction, *Organization Studies*, Vol. 9, No. 1, pp.91-112
- Cope, J. (2005). Researching Entrepreneurship through Phenomenological Inquiry: Philosophical and Methodological Issues, *International Small Business Journal*, Vol. 23, no. 2, pp.163-189

-
- Coser, L. A. (1995). Role-set theory and individual autonomy. *Social Roles and Social Institutions: Essays in Honor of Rose Laub Coser*, 13-20. Blau, J. R. and Goodman, N. (eds.), Chapter 2 in *Social Roles & Social Institutions*, Transaction Publications
- Coser, R. (1975). *The Complexity of Roles as Seedbed of Individual Autonomy in Coser (ed.) The Idea of Social Structure: Essays in Honor of Robert Merton*, New York: Harcourt Brace Jovanovich.
- Coser, R. (1991). *In Defense of Modernity: Role Complexity and Individual Autonomy*. Stanford: Stanford University Press.
- Cott, C. (1998). Structure and Meaning in Multidisciplinary Teamwork, *Sociology of Health and Illness*, Vol. 20, No. 6, pp.848-873
- Coyne, I. T. (1997). Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries?. *Journal of advanced nursing*, 26(3), 623-630. in Goulding, C. (2002). *Grounded Theory: A Practical Guide for Management, Business and Market Researchers*. London: Sage.
- Crest Report on Internationalization of R&D Facing the Challenge of Globalization: Approaches to a Proactive International Policy in S&T*. (2008) Report #EUR 23330, European Commission. Internet: <http://ec.europa.eu/research/research-eu> ISBN 978-92-79-08358-7
- Cross, R. & Cummings, J. (2004). Tie and Network Correlates of Individual Performance in Knowledge- Intensive work. *Academy of Management Journal*, Vol. 47, No. 6, pp. 928-937 in Novak (2008) *Leadership of Organizational Networks: An Exploration of the Relationship between Leadership and Social Networks in Organizations*, PhD Dissertation, UMI#3309284
- Cross, R., Parker, A., Christensen, C. M., Anthony, S. D., & Roth, E. A. (2004). *The hidden power of social networks*. Audio-Tech Business Book Summaries, Incorporated.
- Crotty, M. (1998). *The Foundations of Social Research Meaning and Perspective in the Research Process*, Sage Publications
- Cyert, R. M., & March, J. G. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall, Inc. in Hallén, Johanson and Seyed-Mohamed (1991) *Interfirm Adaptation in Business Relationships*, *Journal of Marketing*, Vol. 55, No.2, pp.29-37
- Czarniawska-Joerges, B. (1992). *Exploring complex organizations: A cultural perspective* in Weick, K. (1995). *Sense-making in Organizations*, Sage Publications: California, USA.

D

- Dahlquist, J. (1998). *Knowledge Use in Business Exchange: Acting and Thinking Business Actors*, Uppsala: Uppsala University, Department of Business Studies, Sweden

-
- Dance, F. E., & Larson, C. E. (1972). *Speech Communication: Concepts and Behavior*. Holt, Rinehart and Winston in Gudykunst, William B and Kim, Young Yun (2003) *Communicating with Strangers: an approach to International Communication*, New York, NY: McGraw-Hill
- Dance, F. E., & Larson, C. (1985). The functions of human communication. *Information and behavior*, Vol. 1, pp. 62-75 in in Gudykunst, William B and Kim, Young Yun (2003) *Communicating with Strangers: an approach to International Communication*, New York, NY: McGraw-Hill.
- Davenport, T. (2005). *Thinking for a living*. Boston: Harvard Business School in Novak (2008) *Leadership of Organizational Networks: An Exploration of the Relationship between Leadership and Social Networks in Organizations*, PhD Dissertation, UMI#3309284
- Davenport, T. H., & Prusak, L. (1998). *Working Knowledge: How Organizations Manage What They Know*. Cambridge, MA: Harvard Business School Press.
- Davydov, V. V., & Kerr, S. T. (1995). The Influence of L. S. Vygotsky on Education Theory, Research, and Practice, *Educational Researcher*, Vol. 24, No. 3, pp. 12-21
- Delbrige, R. & Kirkpatrick, I. (1994). Theory and practice of participant observation, in V.Wass and P.Wells (eds.) *Principles and Practice in Business and Management Research*, Dartmouth: Aldershot
- Denzin, N.K. & Lincoln, Y.S. (2005) (eds.). *The Sage Handbook of Qualitative Research*, Third Edition, Sage, Thousand Oaks
- Dervin, B., Foreman-Wernet, L., & Lauterbach, E. (2003). *Sense-making methodology reader: Selected writings of Brenda Dervin*. Hampton Pr, in Weick, K. (2009). *Making Sense of the Organization (Volume 2)*. UK: Wiley.
- Dewey, J. (1916). *Democracy and Education*, Macmillan, New York, NY in Wilson and Beard (2003) *The Learning Combination Lock- an experiential approach to learning design*, *Journal of European Industrial Training*, Vol.27, pp.88-97
- Dierkes, M., Nonaka, I., Child, J., & Antal, A. B. (2001). *Handbook of Organizational Learning and Knowledge*, Oxford University Press, Oxford and New York, NY
- DiMaggio, P. (1997). Culture and Cognition, *Annual Review Sociology*, Vol. 23, pp.263-287
- Dubini, P. & Aldrich, H. (1991). Personal and Extended Networks are Central to the Entrepreneurial Process, *Journal of Business Venturing*, Vol. 6, pp.305-313
- Dyer, J. H. & Singh, H. (1998). The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage, *Academy of Management Review*, Vol. 23, No. 4, pp.660-679
-

E

- Ebrahim, N. A., Ahmed, S. & Taha, Z. (2008). Literature, Principle and the Basics of Network Value Create in R&D: The relationship with economy, Department of Engineering and Design and Manufacture, Faculty of Engineering, University of Malaysia, In: Seventh conference of Industries and Mines R&D Centers- R&D and Network Value Creation, 29-30 June 2008 IRIB International Conference Center, Tehran, Iran. available at: <http://works.bepress.com/aleebrahim/32>
- Einhorn, H. J., & Hogarth, R. M. (1981). Behavioral decision theory: Processes of judgment and choice. *Journal of Accounting Research*, pp. 1-31.
- Einhorn, H. J., & Hogarth, R. M. (1986). Judging probable cause. *Psychological Bulletin*, Vol. 99, No. 1, pp. 3 in Maier, G. W., Prange, C., & Rosenstiel, L. V. (2001). Psychological perspectives of organizational learning. *Handbook of organizational learning and knowlegde*.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, 14(4), 532-550.
- Elias, N. (1978). What is Sociology?, Oxford: Blackwell in Stacey (2007) *The Challenge of Human Interdependence: Consequences for thinking about the day to day practice of management in Organizations*, *European Business Review*, Vol.119, No. 4, pp.292-302 (p.299)
- Emerson, R. M. (1962) "Power Dependence Relations," *American Sociological Review*, vol. 27, pp. 31-41, In Hallén, Johanson and Seyed-Mohamed (1991) *Interfirm Adaptation in Business Relationships*, *Journal of Marketing*, Vol. 55, No.2, pp.29-37
- Engwall, L. & Johanson, J. (1990). Banks in Industrial Networks, *Scandinavian Journal of Management*, Vol. 6, No.3, pp.231-244
- Ernst, D. & Kim, L. (2002). Global Production Networks, Knowledge Diffusion, and Local Capability Formation, *Research Policy*, Vol. 31, No. 8, pp.1417-1429
- Eyesenck, H. J. (1976). Introduction. In H. J. Eyesenck (Ed.), *Case studies in behavior therapy* (pp.1-15). London: Routledge in Flyvebjerg (2006) Bent Flyvbjerg, "Five Misunderstandings About Case-Study Research," *Qualitative Inquiry*, Vol. 12, No. 2, April 2006, pp. 219-245. (page 224)

F

- Fairclough, N. and Wodak, R. (1997). *Critical discourse analysis*. In *Discourse and Social Interaction*, T. van Dijk (ed.), 258–284. London: Sage in Sørderberg and Vaara (2003) Chapter 2- Theoretical and Methodological Considerations in Merging Across Borders: People, Cultures and Politics. Copenhagen: Copenhagen Business School
- Fairhurst, G. T. and Putnam, L. (2004). Organizations as Discursive Constructions. *Communication Theory*, Vol. 14, no. 1, pp. 5-26.

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Fawcett S. B., Francisco V. T., Paine-Andrews A. & Schultz J. A. (2000). A model memorandum of collaboration: a proposal, *Public Health Reports*, Vol. 115, No. 2-3, pp. 174-9 in Hill, C. (2002). *Network Literature Review: Conceptualizing and Evaluating Networks*, Southern Alberta Child and Youth Health Network, TriAD Research Inc. Calgary Health Region.
- Fincham, R. and Rhodes, P. (2005). *Principles of Organizational Behaviour*. Oxford.
- Fleming, N. D. (2001). <http://www.vark-learn.com/english/index.asp>
- Fleming, N. D. (2001). *Teaching and learning styles: VARK strategies*. Christchurch, New Zealand: Author
- Fendt, J. and Sachs, W. (2008). Grounded Theory Method in Management Research: Users' Perspectives, *Organizations Research Methods*, July, Vol.11, No. 3, pp. 430-455
- Ferrance, E. (2000). *Action research*. Northeast and Islands Regional Educational Laboratory at Brown University: Brown University.
- Festinger, L. (1954). A Theory of Social Comparison Processes, *Human Relations*, Vol.7, pp.117-140
- Firth, J. R. (1951) Modes of Meaning, Essays and Studies, The English Association. Reprinted in *Papers in Linguistics* 1934-51, 1957, Oxford University Press, Oxford.
- Fish, A., & Bhanugopan, R. (2008). Personal Wellbeing and Intra-cultural Interaction Interventions for Cross-Border Adjustment: Investigation of Construct Validity Using Structural Equation Modeling, *Cross Cultural Management: An International Journal*, Vol. 15, No. 3, pp.244-263
- Fiske, S. T. (1993). Social Cognition and Social Perception, *Annual Review Psychology*, Vol. 44, pp.155-194
- Fiske, S. T. (1992). Thinking is for Doing: Portraits of Social Cognition from Daguerreotypes to Laserphoto, *Journal of Personality and Social Psychology*, Vol. 63, pp.877-889 in Weick, K. (1995). *Sensemaking in Organizations*. Thousand Oaks, CA: Sage.
- Fiske, S. T. & Taylor, S. E. (2013). *Social Cognition: From Brains to Culture*. (2nd eds.), Thousand Oaks, CA: Sage.
- Flyvebjerg, B. (2006). Five Misunderstandings About Case-Study Research, *Qualitative Inquiry*, Vol. 12, No. 2, April 2006, pp. 219-245.
- Ford, D., Håkansson, H., and Johanson, J. (1986). How Do Companies Interact? in Johanson and associates (1994) *Internationalization, Relationships and Networks*, Uppsala University, Stockholm, Sweden (p.123-135).
- Forsgren, M., and Johanson, J. (1992). Managing in International Multi-centre Firms, in Johanson and associates (1994) *Internationalization, Relationships and Networks*, Uppsala University, Stockholm, Sweden (p.73-82)

-
- Foss, N. J. (2007). The Emerging Knowledge Governance Approach: Challenges and Characteristics, *Organization*, Vol. 14, No. 1, pp. 29-52
- Fox, S. (2000). Communities of Practice, Foucault and Actor-Network Theory, *Journal of Management Studies*, Vol.37, No. 6, pp.853-867
- French, J. R. and Raven, B. H. (1959). The Bases for Social Power, D. Cartwright (eds.), *Studies in Social Power, Institute for Social Research*, Ann Arbor, MI, pp. 150-167. In Wilson, F. (2004). *Organizational Behaviour and Work: A Critical Introduction*. Oxford.
- French Jr., J. R.P, Israel, J. and As, D. (1960). An Experiment on Participation in a Norwegian Factory: Interpersonal Dimensions of Decision-Making, *Human Relations*, Vol. 13, No. 3, pp.1-8 in Argyris, C. (2009) *Integrating the Individual and the Organization*. (7th ed) New York: Wiley.
- Frost, P. J. (1991). *Reframing Organizational Culture*, Newbury Park, California: Sage
- Frost, P. J., Moore, L. F., Louis, M. R. E., Lundberg, C. C., & Martin, J. E. (1985). *Organizational culture.*, Beverly Hills, CA: Sage
- Fukuyama, F. (1995). Trust: The Social Virtues and the Creation of Prosperity, New York: Free Press, in Schneider and Barsoux (2003) *Managing Across Cultures*, Prentice Hall: England, in Nahapiet, Janine and Ghoshal, Sumantra (1998) *Social Capital, Intellectual Capital and the Organizational Advantage*, *The Academy of Management Review*, Vol. 23, No. 2, pp.242-266

G

- Gallon, M. (1999). Actor-network theory—the market test. *The Sociological Review*, 47(S1), 181-195.
- Gangestad, S. W., & Snyder, M. (2000). Self-monitoring: appraisal and reappraisal. *Psychological bulletin*, Vol. 126, No. 4, pp. 530 in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Gans, H. J. (1968). The participant observer as a human being: Observations on the personal aspects of fieldwork, in Howard S. Becker, et al. (eds.), *Institutions and the Person*. Chicago: Aldine.
- Gassmann, O, Von Zedtwitz, M., (1999) New Concepts and Trends in International R&D Organization, *Research Policy*, Vol. 28, pp. 231-250
- Gassmann, O., and von Zedtwitz, M. (1999). New Concepts and Trends in International R&D Organization, *Research Policy*, Vol. 28, pp. 231-250.
- Geen, R. G. (1995). *Human motivation: A social psychological approach*. Thomson Brooks/Cole Publishing Co in Maier, G. W., Prange, C., & Rosenstiel, L. V. (2001). Psychological perspectives of organizational learning. *Handbook of organizational learning and knowledge*.

-
- Geertz, C. (1973). *The Interpretation of Cultures: selected essays*, New York: Basic Books, Chapter 1: Thick Description: Toward an Interpretive Theory of Culture. (pp. 3-30), in Bate (1999) *Strategies for Cultural Change*, Butterworth Heinemann: Oxford pp.190
- Gephart, R. P. (1993). The textual approach: Risk and blame in disaster sensemaking. *Academy of Management Journal*, Vol. 36, No. 6, pp. 1465-1514. in Bryman, A. and Bell, E. (2007) *Business Research Methods*, 2nd ed, Oxford University Press: Oxford p 500
- Gergen, K. J., (1985). The Social Constructionist Movement in Modern Psychology, *American Psychologist*, Vol. 40, No 3, pp. 266-275 (266)
- Giddens, A. (1979). *Central Problems in Social Theory*, Macmillan, London
- Giddens A. (1984). *The Constitution of Society: Outline of the Theory of Structuration*. Chicago: Policy Press in Johnston, Peters, Gassenheimer (2006) Questions about network dynamics: Characteristics, structures, and interactions, *Journal of Business Research*, Vol. 59, pp.945–954
- Gilroy, B. M. (1993). Networking in multinational enterprises: the importance of strategic alliances (Vol. 236). Columbia: University of South Carolina Press
- Giroud, A., and Scott-Kennel, J. (2009) MNE Linkages in International Business: A Framework for Analysis, *International Business Review*, Vol. 18, pp.555-566
- Glaser, B. & Strauss, A. (1967) *The Discovery of Grounded Theory: strategies for qualitative research*, Aldine de Gruyter: New York, NY
- Glaser, B. & Strauss, A. (1968). *Time for dying*. Chicago: Aldine.
- Glaser, B. G. (1992). *BASICS OF GROUNDED THEORY ANALYSIS: Emergence vs. Forcing*, Mill Valley, CA: Sociology Press.
- Glaser, B. G. (1998). *DOING GROUNDED THEORY: Issues and Discussions*, ISBN 1-884156-11-8
- Glaser, B. G. (1978). *THEORETICAL SENSITIVITY: Advances in the methodology of Grounded Theory*, ISBN 1-884156-01-0
- Glaser, B. G. (1998). *DOING GROUNDED THEORY: Issues and Discussions*, ISBN 1-884156-11-8
- Glaser, B. G. (2001). *THE GROUNDED THEORY PERSPECTIVE: Conceptualization Contrasted with Description*, Mill Valley, CA: Sociology Press. ISBN 1-884156-15-0
- Goffman, E. (1959). The Presentation of the Self in Everyday Life
- Goldschmidt, W. (1996). Functionalism. In D. Levinson & M. Ember (Eds.), *Encyclopedia of Cultural anthropology*. Vol. 2 (p. 510). New York: Henry Holt and Company
- Goleman, D. (1995). *Emotional Intelligence: Why It Can Matter More than IQ for Character, Health, and Lifelong Achievement*, Bantam Books, New York, in Brück and Kainzbauer (2009) The Contribution of Autophotography for Cross-Cultural Knowledge Transfer, *European J. Cross-Cultural Competence and Management*, Vol. 1, No.1, pp.77-96

- Goleman, D. (1998). *Working with Emotional Intelligence*, London: Bloomsbury Publishing
- Goulding, C. (2002). *Grounded Theory: A Practical Guide for Management, Business and Market Researchers*, London: Sage
- Grabianowski, E. (2007). "How Soccer Works" 25 May 2007. HowStuffWorks.com.
- Grandori, A. (1997). 'Governance Structures, Coordination Mechanisms and Cognitive Models', *Journal of Management and Governance*, Vol. 1, pp. 29–42
- Grandori, A. and Kogut, B. (2002). 'Dialogue on Organization and Knowledge', *Organization Science*, Vol. 13, pp. 224–32.
- Granovetter, M. (1973). 'The Strength of Weak Ties', *American Journal of Sociology*, Vol. 78, pp. 1360–80
- Granovetter, M. (1979). *The Theory Gap in Social Network Analysis*, in Holland and Leinhardt (eds.), *Perspectives on Social Network Research*, pp.501-518 in Kilduff and Tsai (2009) *Social Networks and Organizations*, Sage: London, pp.67
- Granovetter, M. (1983). The Strength of Weak Ties: A Network Theory Revisited, *Sociological Theory*, Vol.1, pp.201-233
- Grant, R. M. (1996). Prospering in Dynamically-competitive Environments: Organizational Capacity as Knowledge Integration, *Organization Science*, Vol.7, No. 4, pp. 375-387, in Håkansson and Johanson (2001) *Business Network Learning*, Oxford: Pergamon, pp. 189
- Gray, B. (1985). Conditions Facilitating Interorganizational Collaboration, *Human Relations*, Vol. 38, pp. 911-936
- Gray, B. and Wood, D. J. (1991). Collaborative Alliances: Moving from Practice to Theory, *Journal of Applied Behavioral Science*, Vol. 27, No. 1, pp.3-22
- Greenwood, D. and Levin, M. (1998) *Introduction to Action Research*. Thousand Oaks, CA: Sage.
- Gregory, K. L. (1983). Native-View Paradigms: Multiple Cultures and Culture Conflicts in Organizations. *Administrative Science Quarterly*, Vol. 28, No. 3, pp. 359-376.
- Guba, E. G., & Lincoln, Y. S. (2005). "Paradigmatic controversies, contradictions, and emerging influences" (p. 200). In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (3rd ed.), pp. 191-215. Thousand Oaks, CA: Sage. ISBN 0-7619-2757-3
- Gudykunst, W. B. and Kim, Y. Y. (2003). *Communicating with Strangers: an approach to International Communication*, New York, NY: McGraw-Hill.
- Gummesson, E. (2000) *Qualitative Methods in Management Research*, 2nd edition, Sage, Thousand Oaks, CA, 2000.

H

- Habermas, J., & Habermas, J. (1989). *The Theory of Communicative Action*, Vol. 2, Boston, MA: Beacon Press in Todeva, E. (2006). *Business Networks: Strategy and Structure*, Routledge: New York (pp.107)
- Halal, W. E., & Taylor, K. B. (1998). *Twenty-First Century Economics: Perspectives of Socioeconomics for a Changing World*. New York, NY: St. Martin's Press.
- Harris, M. (1964). *The Nature of Cultural Things*, New York: Random House.
- Haslam, S. (1999). *Personal Legitimizing: a substantive grounded theory in the context of small consultancy firms*, PhD thesis, University of Strathclyde.
- Hatch, M. J. (1993). The Dynamics of Organizational Culture. *The Academy of Management Review*, Vol. 18, No. 4, pp. 657-693.
- Hatch, M. J. (1997). *Organization Theory: Modern, Symbolic, and Post-modern Perspectives*, Chapter 12: Organizational Change and Learning, Oxford University Press: Oxford, New York
- Hatch, M. J. & Cunliffe, A. (2006). *Organization Theory: Modern, symbolic and postmodern perspectives*, 2nd ed. Oxford
- Hawk, T. F., & Shah, A. J. (2007). "Using Learning Style Instruments to Enhance Student Learning" *Decision Sciences, Journal of Innovative Education*, Vol. 5, No.1, pp. 1-19
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley,.
- Hill, C. (2002). *Network Literature Review: Conceptualizing and Evaluating Networks*, Southern Alberta Child and Youth Health Network, TriAD Research Inc. Calgary Health Region.
- Hills, M. D. (2002). Kluckhohn and Strodtbeck's Values Orientation Theory, *Online Readings in Psychology and Culture*, 2002, Vol.4, No. 4, pp. 3.
- Holden, N. (2002). *Cross-Cultural Management: A Knowledge Management Perspective*, FT Prentice Hall: Harlow, UK
- Holden, N.J. & Claes, M. T. (2001). 'Management in search of a universal language of excellence', paper presented at *3rd IACCM Conference*, Vienna in Claes, M. T. (2009). The Linguistic Shift in Cross-cultural Studies: Culture in Discourse, *European J. Cross-Cultural Competence and Management*, Vol. 1, No.1, pp.66-76
- Hall, E. T. (1959). *The Silent Language*. New York: Doubleday.
- Hallen, L., Johanson, J., & Seyed-Mohamed, N. (1991). Interfirm Adaptation in Business Relationships, *Journal of Marketing*, Vol. 55, No.2, pp.29-37

-
- Harary, F. (1965). "Graph Theory and Group Structure." In Readings in *Mathematical Psychology*. Vol. 2, edited by Luce, Bush, and Galanter, New York: Wiley, in Granovetter (1973) The Strength of Weak Ties, *American Journal of Sociology*, Vol. 78, No.6, pp.1360-1380
- Harryson, S. J., Dudkowski, R., & Stern, A. (2008). Transformation Networks in Innovation Alliances—The Development of Volvo C70, *Journal of Management Studies*, Vol.45, No.4, pp.745-773
- Hitt, M. A., Beamish, P. W., Jackson, S. E., & Mathieu, J. E. (2007). Building Theoretical and Empirical Bridges Across Levels: Multilevel Research in Management, *Academy of Management Journal*, Vol.50, No.6, pp.1385-1399
- Hofstede, G. (1980). *Culture's Consequences: International Differences in work-related values*. Beverly Hills, CA: Sage.
- Hollander, J. A., & Gordon, H. R. (2006). The Processes of Social Construction in Talk, *Symbolic Interaction*, Vol. 29, No. 2, pp. 183-212
- Horwitz, F. M., Chang, T. H., Hesan, A. Q., Nonkwelo, C., Roditi, D., & Van Eck, P. (2006). Human resource strategies for managing knowledge workers: An Afro-Asian comparative analysis. *International Journal of Human Resource Management*, Vol. 17, pp. 775-811 in Lin, C. P. (2010). Learning Task Effectiveness and Social Interdependence through the Mediating Mechanisms of Sharing and Helping: A Survey of Online Knowledge Workers, *Group & Organization Management*, Vol. 35, No. 3, pp.299-328
- Horwitz, F. M., Heng, C. T., & Quazi, H. A. (2003). Finders, keepers? Attracting, motivating and retaining knowledge workers. *Human Resource Management Journal*, Vol. 13, pp. 23-44 in Lin, C. P. (2010). Learning Task Effectiveness and Social Interdependence through the Mediating Mechanisms of Sharing and Helping: A Survey of Online Knowledge Workers, *Group & Organization Management*, Vol. 35, No. 3, pp.299-328
- Hosmer, L. T. (1995). Trust: The Connecting Link between Organizational Theory and Philosophical Ethics, *Academy of Management Review*, Vol. 20, No. 2, pp. 379-403
- Huber, G. P. (1991). Organizational Learning: The Contributing Processes and The Literatures, *Organization Science*, Vol.2, No. 1, pp.88-115
- Huges, J. A., & Sharrock, W.W. (1997). *The Philosophy of Social Research*, 3rd edition, Pearson: Essex.
- Huges, J. A., & Sharrock, W.W. (2007). *Theory and Methods in Sociology—an introduction to sociological thinking and practice*, Palgrave MacMillan
- Hui, C. H., & Triandis, H. C. (1989). Effects of Culture and Response Format on Extreme Response Style, *Journal of Cross-Cultural Psychology*, Vol. 20, No. 3, pp.296-309
- Huijser, M. (2006). *The Cultural Advantage: A New Model for Succeeding with Global Teams*, The Intercultural Press: Boston
- Huntington, S. P. (1993). The Clash of Civilizations?, *Foreign affairs*, Vol. 73, No. 3, pp. 22-49.

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Håkansson, H. (Ed.). (1982). *International marketing and purchasing of industrial goods: An interaction approach*. Chichester: John Wiley & Sons
- Håkansson, H., & Ford, D. (2002). Håkansson and Ford (2002) How should companies interact in business networks?, *Journal of Business Research*, Vol. 55, pp.133-139
- Håkansson, H. & Johanson, J. (1992). A Model of Industrial Networks in Johanson and associates (1994) *Internationalization, Relationships and Networks*, Uppsala University, Stockholm, Sweden (p.153-158)
- Håkansson, H. & Johanson, J. (1993). The Network as a Governance Structure: Interfirm Cooperation Beyond Markets and Hierarchies in Johanson and associates (1994) *Internationalization, Relationships and Networks*, Uppsala University, Stockholm, Sweden (p.211-223)
- Håkansson, H. & Johanson, J. (2001). *Business Network Learning*, Oxford: Pergamon

I

-
- Inkeles, A., & Levinson, D. J. (1969). National Character: The Study of Modal Personality and Sociocultural Systems, in *The Handbook of Social Psychology*, Vol. 4, 2nd ed., (Chapter 34, pp.418-481), G. Lindzey and E. Aronson, eds. Cambridge, MA: Addison-Wesley Publishing Company.
- Inkpen, A. C. & Tsang, E. W. (2005). Social Capital, Networks, and Knowledge Transfer, *The Academy of Management Review*, Vol. 30, No.1, pp.146-165

J

-
- Jacobs, J. (1965). *The Death and Life of Great American Cities*. London: Penguin Books in Nahapiet, J. and Ghoshal, S. (1998). Social Capital, Intellectual Capital, and Organizational Advantage, *Academy of Management Review*, Vol. 23, No. 2, pp. 242-266
- Jacob, N. (2005). Cross-cultural Investigations: Emerging Concepts. *Journal of Organizational Change Management*, Vol. 18, No. 5, pp. 514-528.
- James, W. (1890). *The principles of psychology (Vol. 1)*. New York: Holt in Fiske, Susan T (1993) Social Cognition and Social Perception, *Annual Review Psychology*, Vol. 44, pp.155-194
- Johanson & Associates (1994). *Internationalization, Relationships and Networks*, Uppsala University, Stockholm, Sweden: Almqvist & Wiksell International
- Johanson, J., & Mattsson, L. G. (1987). Interorganizational Relations in Industrial Systems: A Network Approach Compared with the Transaction-Cost Approach, *International Studies of Management & Organization*, Vol. 17, No. 1, pp. 34-48 in Johanson and associates (1994) *Internationalization, Relationships and Networks*, Uppsala University, Stockholm, Sweden (p.175).

-
- Johanson, J. & Vahlne, J-E. (2003). Business Relationship Learning and Commitment in the Internationalization Process, *Journal of International Entrepreneurship*, Vol. 1, 83-101
- Johanson, J. & Vahlne, J-E. (2003). *Building a Model of Firm Internationalization*, Chapter 1, in Blomstermo Anders and Sharma, D. Deo (2003) Learning in the Internationalization Process of Firms, Edward Elgar: MA
- Johanson, J. & Vahlne, J-E. (2009). The Uppsala Internationalization process model revisited: From liability of foreignness to liability of outsidership, *Journal of international Business Studies*, Vol. 40, pp.1411-1431
- Johnston, R. J., Gregory, D., & Pratt, G. Michael Watts, eds. (2000). *The dictionary of Human Geography*. Blackwell Publishers Ltd, Oxford.
- Johnston, W. J., Peters, L. D., & Gassenheimer, J. (2006). Questions about Network Dynamics: Characteristics, Structures, and Interactions, *Journal of Business Research*, Vol. 59, pp.945-954
- Johns, G. (1996). *Organizational Behavior: Understanding and Managing Life at Work*, Chapter 4: Perceptions, Attributions, and Judgments of Others, pp.87-115, 4th Eds., New York: HarperCollins
- Jones, C., Hesterly, W. S., & Borgatti, S. P. (1997). A General Theory of Network Governance: Exchange Conditions and Social Mechanisms, *Academy of Management Review*, Vol. 22, No.4, pp.911-945
- Jones, G. R. (1993). *Organizational Theory, Design and Change*. New Jersey: Prentice Hall.
- Josserand, E. (2004). *The Network Organization: The Experience of Leading French Multinationals*, Edward Elgar: UK and USA
- Jussim, L. (1991). Social Perception and Social Reality: A Reflection-Construction Model, *Psychological Review*, Vol. 98, No. 1, pp. 54-73

K

-
- Kelley, H. H. (1967). Attribution theory in social psychology. In *Nebraska symposium on motivation*. University of Nebraska Press in Johns, Gary (1996) *Organizational Behavior: Understanding and Managing Life at Work*, Chapter 4: Perceptions, Attributions, and Judgments of Others, pp.87-115, 4th Eds., New York: HarperCollins
- Kenneth D. A. (2005). *Explorations in Classical Sociological Theory: Seeing the Social World*. Thousand Oaks, CA: Sage.
- Kenny, D.A. (1994). *Interpersonal Perception*. Guilford Press, New York in Casciaro, T. (1998). Seeing things clearly: Social Structure, Personality, and Accuracy in Social Network Perception, *Social Networks*, Vol. 20, No. 4, pp.331-351

-
- Kilduff, M., & Day, D. V. (1994). Do chameleons get ahead? The effects of self-monitoring on managerial careers. *Academy of Management Journal*, Vol. 37, No. 4, pp. 1047-1060 in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Kilduff, M. & Krackhardt, D. (2008). *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Kilduff, M. & Tsai, W. (2003). (reprinted in 2009) *Social Networks and Organization*, London: Sage
- Kim, D. H. (1993) The Link between Individual and Organizational Learning, *Sloan Management Review*, Fall, pp.37-50
- Kim, K. H., Payne, G. T., & Tan, J. A. (2006). An Examination of Cognition, and Affect in Strategic Decision Making, *International Journal of Organizational Analysis*, Vol.14, No. 4, pp.277-294
- King, N. (2004). Using Interviews in Qualitative Research, (Chapter 2) in Cassell, C. and Symon, G. (eds.), *Essential Guide to Qualitative Methods in Organizational Research*, Thousand Oaks, CA: Sage.
- Kleinberg, J. (1989). Cultural Clash between Managers: America's Japanese Firms, in S. B. Prasad (Ed.), *Advances in International Comparative Management* (Vol. 4, pp. 221-244). Greenwich, CT: JAI.
- Klint, M. B. (1985). *Mot en konjunkturpassad kundstrategi*. Uppsala:Företagsekonomiska institutionen. Doctoral thesis.
- Kluckhohn, C. (1951). *Values and Value Orientation in the Theory of Action: An Exploration in Definition and Classification*, in T. Parsons & E. A. Shils (Eds.), *Toward a General Theory of Action* (pp. 388-433). Cambridge, MA: Harvard University Press.
- Kluckhohn, F. R. & Strodtbeck, F. L. (1961). *Variations in Value Orientations*. Evanston, IL: Row, Peterson.
- Knight, L. (2002). Network Learning: Exploring Learning by Interorganizational Networks, *Human Relations*, Vol.55, No. 4, pp.427
- Knoben, J. (2008). *Firm Mobility and Organizational Networks: Innovation, Embeddedness and Economic Geography*. UK: Edwards Elgar Publishing limited.
- Kolb, D. A. (1984) *Experiential Learning: experience as the source of learning and development*, Englewood Cliffs, NJ: Prentice Hall
- Kogut, B., & Zander, U. (1992). Knowledge of the Firm, Combinative Capabilities, and The Replication of Technology, *Organization Science*, Vol.3, No.3, pp.383-397
- Kogut, B., & Zander, U. (1993) Knowledge of the Firm, and the Evolutionary Theory of the Multinational Corporation, *Journal of International Business Studies*, Vol. 24, pp.625-646

-
- Kogut, B., & Zander, U. (1996) What Firms So? Coordination, Identity and Learning, *Organization Science*, Vol. 7, No.5, pp.502-518
- Kostova, T., & Roth, K. (2003). Social Capital in Multinational Corporations and a Micro-Macro Model of its Formation, *The Academy of Management Review*, Vol. 28, No. 2, pp.297-317
- Krackhardt, D. (1990) Assessing the Political Landscape: Structure, Cognition, and Power in Organizations, *Administrative Science Quarterly*, Vol. 35, No.2, pp.342-369
- Krackhardt, D. (1994). Constraints on the interactive organization as an ideal type in C. Heckscher & A. Donnellon (eds.), *The post-bureaucratic organization: New perspectives on organizational change* (pp. 211-222). Thousand Oaks, CA: Sage.
- Novak (2008) Leadership of Organizational Networks: An Exploration of the Relationship between Leadership and Social Networks in Organizations, PhD Dissertation, UMI#3309284
- Krackhardt, D., & Brass, D. J. (1994). *Intraorganizational Networks: the Micro Side*, in Wasserman and Galaskiewicz (eds.) *Advances in the Social and Behavioral Sciences from Social Network Analysis*, Beverly Hills: Sage, Chapter 8, pp.209-230
- Kramer, R. M., & Tyler, T. R. (1996). Whither Trust? In Kramer, R and Tyler, T (eds.), *Trust in Organizations: Frontiers of Theory and Research*: 1, 15, Thousand Oaks, CA: Sage
- Nahapiet, J. and Ghoshal, S. (1998). Social Capital, Intellectual Capital, and Organizational Advantage, *Academy of Management Review*, Vol. 23, No. 2, pp. 242-266
- Krauss, R. M., & Fussell, S. R. (1991). Perspective-taking in communication: Representations of others' knowledge in reference. *Social Cognition*, 9(1), 2-24 in Fiske, Susan T (1993) *Social Cognition and Social Perception*, *Annual Review Psychology*, Vol. 44, pp.155-194
- Kuada, J., & Sørensen, O. (2010). Culture-in-Action and Creative Learning in Cross-border R&D Teams, Chapter 3 in Kuada, J., and Sørensen, O., (eds.) *Culture and Creativity in Organizations and Societies*, Adonis and Abbey, Publishers, Ltd.: London
- Krugman, P., & Obstfeld, M. (1994). *International Economics* (3rd Ed.,) New York, in Boutellier, R. , Gassmann, O., and von Zedtwitz, M. (2008). *Managing Global Innovation*, Springer-Verlag: Berlin Heidelberg
- Kvale, S. (1996). *Interviews: An Introduction to Qualitative Research Interviewing*. London: Sage

L

-
- Langness, L. L. (1987). *The study of culture*. Novato, CA: Chandler & Sharp Publishers, Inc.
- Langer, E. J. (1989). Minding matters: The consequences of mindlessness-mindfulness, *Advances in experimental social psychology*, 22(12), 137-173 in Weick, K. (1995). *Sense-making in Organizations*, Sage Publications: California, USA.

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Larson, A. (1992). Network Dyads in Entrepreneurial Settings: A study of the Governance of Exchange Relationships, *Administrative Science Quarterly*, Vol. 37, No. 1, pp.76-104
- Latour, B. (1987). *Science in Action: How to Follow Scientists and Engineers through Society*, Harvard University press.
- Laumann, E. O. (1968). Interlocking and Radial Friendship Networks: A Cross-sectional Analysis, *Working Paper No. 5, Detroit Area Study*, Ann Arbor: University of Michigan, Department of Sociology in Granovetter (1973) The Strength of Weak Ties, *American Journal of Sociology*, Vol. 78, No.6, pp.1360-1380
- Law, J. (1986). On power and its tactics: a view from the sociology of science, *Sociological Review*. Vol. 34, pp. 1-38.
- Law, J. (1987). Technology and heterogeneous engineering: The case of the Portuguese expansion, in Bijker, W. E., Hughes, T. P., Pinch, T., & Douglas, D. G. (eds.) (2012). *The social construction of technological systems: New directions in the sociology and history of technology*. Cambridge, Mass: MIT Press.
- Law, J. (1992). 'Notes on the Theory of the Actor-Network: Ordering, Strategy and Heterogeneity', *Systems Practice*, 5 (1992), 379-93. Please refer to the original publication for the definitive text.
- Lee, Y. T. (2010). Home Versus Host—Identifying with Either, Both or Neither?: The Relationship between Dual Cultural Identities and Intercultural Effectiveness, *International Journal of Cross-Cultural Management*, Vol. 10, No.1, pp.55-76
- Leite, W. L., Svinicki, M., & Shi, Y. (2009). Attempted Validation of the Scores of the VARK, *Learning Styles Inventory With Multitrait–Multimethod Confirmatory Factor Analysis Models*, pg. 2. SAGE Publications
- Levinthal, D. (2007). Technology: The Role of Network Structures, *Strategic Entrepreneurship Journal*, Vol. 1, pp. 189-190.
- Levi-Strauss, C. (1958) *Structural Anthropology*. Paris: Plon
- Levitt, B., & March, J. G. (1988). Organizational learning. *Annual review of sociology*, 319-340 in Pawlowsky, Peter (2001) The Treatment of Organizational Learning in Management Science, Chapter 3, in Dierkes, Berthoin Antal, Child and Nonaka (2001) *Handbook of Organizational Learning and Knowledge*, Oxford University Press, Oxford and New York, NY
- Lawrence, P. and Lorsch, J. (1967). *Organization and Environment*, Cambridge, MA: Harvard Graduate School of Business Administration in Hallen, L., Johanson, J., & Seyed-Mohamed, N. (1991) Interfirm Adaptation in Business Relationships, *Journal of Marketing*, Vol. 55, No.2, pp.29-37

-
- Lewin, K. (1946). Action Research and minority problems, in K. Lewin, *Resolving Social Conflicts: Selected Papers on Group Dynamics*. G. Lewin (ed.) reprinted 1997, Washington, DC: American Psychological Association. pp. 144-154
- Lewin, K. (1948). Group decision and social change, reprinted in M. Gold (ed.) (1999) *The Complete Social Scientist: A Kurt Lewin Reader*. Washington, DC: American Psychological Association. pp. 265-84.
- Li, J., and Yue, D. R. (2005). Managing Global Research and Development in China: Patterns of R&D Configuration and Evolution, *Technology Analysis and Strategic Management*, Vol. 17, No.3, pp.317-337
- Li, Li (2005) The Effects of Trust and Shared Vision on Inward Knowledge Transfer in Subsidiaries” Intra and Inter-Organizational Relationships, *International Business Review*, Vol. 14, pp.77-95
- Li, Z., Bao-wei, L., Ye-zhuang, T., & Brian, E. (2006, October). Framework on High-performance Leadership in Knowledge-based Companies. In Management Science and Engineering, 2006. *ICMSE'06. 2006 International Conference on* (pp. 1274-1278). IEEE.
- Liebeskind, J. P., Oliver, A. L., Zucker, L., & Brewer, M. (1996) Social Networks, Learning, and Flexibility: Sourcing Scientific Knowledge in New Biotechnology Firms, *Organization Science*, Vol.7, No. 4, pp.428-443
- Lin, C. P. (2010). Learning Task Effectiveness and Social Interdependence Through the Mediating Mechanisms of Sharing and Helping: A Survey of Online Knowledge Workers, *Group & Organization Management*, Vol. 35, No. 3, pp.299-328
- Lincoln, YS. & Guba, EG. (1985). *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications.
- Louis, M. R. (1983). Organizations as culture-bearing milieu, in L. R. Pondy, P. J. Frost, G. Morgan, and T. C. Dandridge (Eds.), *Organizational Symbolism*. Greenwich, CT: JAI, 39-40.
- Lowe, S. (2001). *The Ideational Dynamics of Cultural Interaction and Actor Bonds*, The Management Centre King's College, London in *17th IMP Conference*, Oslo, Norway.
- Lustig, M. W. and Koester, J. (1993) *Intercultural Competence: interpersonal communication across cultures*, HarperCollins College Publishers: University of Michigan (specifically pp.165-167)

M

- Maanen, J.V, & Barley, S. R., (1985). Chapter 2: Cultural Organizations- Fragments of a Theory in Frost, P. J., *Organizational culture* (pp. 31-53). Beverly Hills: Sage Publications
- Maier, G. W., Prange, C., & Rosenstiel, L. V. (2001). Psychological perspectives of organizational learning. *Handbook of organizational learning and knowledge*.

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Maimone, F. and Mormino, S. (2010) The Role of Informal Networks in Knowledge Sharing in Transnational Organizations, *Submitted to IXth IACCM Annual Conference*, Cross-cultural Management Education and Research: Balancing Scholarly Concerns with Practitioner Challenges, 22-25 June, 2010
- Maimone, F. and Mormino, S. (2012). Organizational Cultures: Toward a Complex Approach for the Understanding of Cultures in Postmodern Organizations, *The International Journal of Knowledge, Culture and Change Management*, Vol. 11, No. 5, pp.179-192
- Malinowski, B. (1944) *A scientific theory of culture and other essays*. Univ. of North Carolina Press, Chapel Hill.
- Malone, T. W., Rockart, J. F. (1991). *Computers, networks and the corporation*. Scientific American 265: 128–136 in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.
- March, J. (1988). *Decisions and Organizations*. Oxford: Basil Blackwell Ltd. in Hallen, L., Johanson, J., & Seyed-Mohamed, N. (1991) Interfirm Adaptation in Business Relationships, *Journal of Marketing*, Vol. 55, No.2, pp.29-37
- Marschan-Piekkari, R. and Welch, C. (ed.) (2004) *Handbook of Qualitative Research Methods for International Business*, Edward Elgar: UK
- Martin, J. (1992). *Cultures in Organizations: Three Perspectives*. New York: Oxford University Press.
- Martin, J. (2002). *Organizational Culture: Mapping the Terrain*, Thousands Oaks: Sage.
- Martin, J. and Meyerson, D. (1998). Organizational culture and the Denial, Channeling and Acknowledgement of Ambiguity, in L. Pondy, R. Boland, Jr., and H. Thomas (Eds.), *Managing Ambiguity and Change*, (pp. 93-125). New York: John Wiley
- Martin, J., Sitkin, S. B., and Boehm, M. (1985). Founders and the Elusiveness of a Cultural Legacy, In P. J. Frost, L. F. Moore, M. R. Louis, C. C. Lundberg, & J. Martin (Eds.), *Organizational Culture*, Beverly Hills, CA: Sage.
- Mason, R. (2007). Culture: An Overlooked Key to Unlocking Organizational Knowledge, Chapter 2, pp.21-34, in *Cross-Cultural Perspectives on Knowledge Management*, Pauleen, David, J. (editor), Libraries Unlimited: Westport, Connecticut, USA
- Matheson, K., Holmes, J. G., & Kristiansen, C. M. (1991). Observational goals and the integration of trait perceptions and behavior: Behavioral prediction versus impression formation. *Journal of Experimental Social Psychology*, 27(2), 138-160 in Fiske, Susan T (1993) Social Cognition and Social Perception, *Annual Review Psychology*, Vol. 44, pp.155-194
- Mattessich, P. W., Murray-Close, M., & Monsey, B. R. (2001) *Collaboration: What makes it work, a review of research literature on factors influencing successful collaboration* (2nd ed.). Saint Paul, MN: Amherst H. Wilder Foundation

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Matthew M., and Huberman, M. A. (1994). *Qualitative data analysis: An expanded sourcebook*, Sage
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995) An Integrative Model of Organizational Trust, *Academy of Management Review*, Vol. 20, No. 3, pp.709-734 in Schneider and Barsoux (2003) *Managing Across Cultures*, Prentice Hall: England, p.246
- McCarthy, T. (1994). *Philosophy and Critical Theory*, in McCarthy, T and Hoy, D.C., *Critical Theory*, Oxford: Blackwell, 5-100, in Tsoukas, H. and Vladimirou, E. (2001). What is Organizational Knowledge, *Journal of Management Studies*, Vol. 38, No. 7, pp.973-993
- Mead, G. H. (1913). The Social Self, *Journal of Philosophy, Psychology and Scientific Methods*, Vol. 10, pp.374- 380.
- Mead, G. H. (1925). The Genesis of the Self and Social Control, *International Journal of Ethics*, Vol. 35, No. 3, pp.251-277.
- Mead, G. H. (1934). *Mind, self, and society*, Chicago: U of Chicago P.
- Meadows, P. (1967). The Metaphors of Order: Toward a Taxonomy of Organization Theory, *Sociological Theory: Inquiries and Paradigms*: in Llewellyn Gross (Ed.), New York: Harper & Row. pp. 77-103.
- Melia, K.M (1996) 'Rediscovering Glaser', *Qualitative Health Research*, Vol. 6, no. 3, pp. 368-78 in Goulding, C. (2002). *Grounded Theory: A Practical Guide for Management, Business and Market Researchers*. London: Sage.
- Melrose, M.J. (2001). Maximizing the Rigor of Action Research: Why would you want to? How could you?, *Field Methods*, Vol. 9, No. 3, pp. 160-180.
- Merton, R. (1968). *Social Theory and Social Structure*. New York: Free Press in Cott, Cheryl (1998) *Structure and Meaning in Multidisciplinary Teamwork*, *Sociology of Health and Illness*, Vol. 20, No. 6, pp.848-873
- Meyerson, D. E. & Martin, J. (1987). Cultural Change.: An integration of three different views. *Journal of Management Studies*, Vol. 24, pp. 623-647.
- Meyerson, D. E., Weick, K. E., & Kramer, R. M. (1996). Swift Trust and Temporary Groups, in Kramer and Tyler (eds.) *Trust in Organizations: Frontiers of Theory and Research*, Sage: California, pp.166-195, in Schneider and Barsoux (2003) *Managing Across Cultures*, Prentice Hall: England, pp. 246
- Mezias, J. M., & Scandura, T. A. (2005). A Needs-Driven Approach to Expatriate Adjustment and Career Development: A Multiple Mentoring Perspective, *Journal of International Business Studies*, Vol. 36, pp.519-538
- Mezirow, J. (1991). *Transformative Dimensions of Adult Learning*. San Francisco, CA: Jossey-Bass

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Miles, M.B. & Huberman, A.M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*, 2nd ed., Sage Publications, Newbury Park, CA
- Mill, John Stuart. [1859] 1956. *On Liberty*. ed. C. V. Shields. Indianapolis: Bobbs-Merrill in Mutz, Diana (2002) Cross-cutting Social Networks: Testing Democratic Theory in Practice, *The American Political Science Review*, Vol. 96, No. 1, pp.111-126
- Miller, D. (1996). A Preliminary Typology of Organizational Learning: synthesizing the literature, *Journal of Management*, pp.485-505 in Buelens, Marc, Van den Broeck, Herman, and Vanderheyden, Karlien (2006) *Organizational Behavior*, 3rd edition, McGraw Hill Education: Berkshire, UK
- Miller, D. L. (1982). *The Individual and the Social Self: Unpublished Essays by G. H. Mead*. University of Chicago Press.
- Miller, G. R., & Steinberg, M. (1975). *Between people*. Chicago: Science Research Associates in Gudykunst, William B and Kim, Young Yun (2003) *Communicating with Strangers: an approach to International Communication*, New York, NY: McGraw-Hill.
- Miller, G. R., & Sunnafrank, M. J. (1982). All is for one but one is not for all: A conceptual perspective of interpersonal communication. In F. E. X. Dance (Ed.), *Human communication theory* (pp. 220-242). New York: Harper and Row. In Gudykunst, William B and Kim, Young Yun (2003) *Communicating with Strangers: an approach to International Communication*, New York, NY: McGraw-Hill
- Milliman, J., Taylor, S., and Czaplewski, A. J. (2002). Cross-Cultural Performance Feedback in Multinational Enterprises: opportunity for Organizational Learning, *Gale Group, Human Resource Planning*, 25(3), 29-43.
- Mintzberg, H. (1979). An Emerging Strategy of "Direct" Research, *Administrative Science Quarterly*, Vol. 24, No. 4, pp. 582-589
- Mohr, J., & Nevin, J. R. (1990) Communication strategies in marketing channels: a theoretical perspective. *Journal of Marketing*, Vol. 54, No. 4, pp.36-52, in Johnston, W. J., Peters, L. D., & Gassenheimer, J. (2006) Questions about network dynamics: Characteristics, structures, and interactions, *Journal of Business Research*, Vol. 59, pp.945-954
- Moliterno, T. P., & Mahony, D. M. (2011). Network Theory of Organization: A Multilevel Approach, *Journal of Management*, Vol.37, No. 2, pp.443-467
- Morris, C. (eds.) (1934). *Mind, Self, and Society: From the Standpoint of a Social Behaviorist*, by Herbert Miller, University of Chicago Press: Chicago, IL, USA
- Mumby, D. (1994). Cultures in Organizations: Three Perspectives, by Joanne Martin. *Academy of Management Review*, Vol. 19, pp. 156-159.
- Murdock, G. P. (1940). The Cross-Cultural Survey, *American Sociological Review*, Vol.5, No. 3, pp.361-370

Mutz, D. (2002). Cross-cutting Social Networks: Testing Democratic Theory in Practice, *The American Political Science Review*, Vol. 96, No. 1, pp.111-126

N

Nahapiet, J. & Ghoshal, S. (1998). Social Capital, Intellectual Capital, and Organizational Advantage, *Academy of Management Review*, Vol. 23, No. 2, pp. 242-266

Napier, N. K. & Nilsson, M. (2008). *The Creative Discipline: mastering the art and science of innovation*, Connecticut, US: Praeger

Nesse, R. M., & Berridge, K. C. (1997, October 3). Psychoactive drug use in evolutionary perspective. *Science*, Vol. 278, pp. 63– 66. doi:10.1126/ science.278.5335.63 in Scherer, K. R., & Tran, V. (2001). Effects of emotion on the process of organizational learning. *Handbook of organizational learning and knowledge*, 369-392.

Newcomb, T. M., Turner, R. H., & Converse, P. E. (1952). *Social Psychology: The Study of Human Interaction*, London: Routledge and Keegan Paul Ltd. in Hallen, L., Johanson, J., & Seyed-Mohamed, N. (1991). Interfirm Adaptation in Business Relationships, *Journal of Marketing*, Vol. 55, No.2, pp.29-37

Nickerson R. S. (1992). *Looking Ahead: Human Factors Challenges in a Changing World*. Lawrence Earlbaum Associates: Hillsdale, NJ in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.

Nisbett, R. E. (2003) *The Geography of Thought: How Asians and Westerners think differently—and why*, New York: Free Press

Nonaka, I. & Takeuchi, H. (1995) *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*, New York, NY: Oxford University Press

Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation, *Organization Science*, Vol. 5, No. 1, pp.14-37

Nonaka, I. (1991). The knowledge creating company, *Harvard Business Review*, November-December, pp. 96-104. Also in Bartlett, C.H., Ghoshal, S. (2000): *Transnational Management, Texts, Cases, and Readings in Cross-Border Management*, International ed. McGraw Hill, Singapore, 2, (reading 6-1 pp.681-690)

Newcomb, T. M. (1961). *The Acquaintance Process*, Chapter 5 New York: Holt, Rinehart & Winston in Granovetter (1973) The Strength of Weak Ties, *American Journal of Sociology*, Vol. 78, No.6, pp.1360-1380

Noorderhaven, N., & Harzing, A. W. (2009). Knowledge-sharing and Social Interaction within MNEs, *Journal of International Business Studies*, Vol. 40, pp.719-741

Nooteboom, B. (2002). *Trust: Forms, Foundations, Functions, Failures, and Figures*, Edward Elgar: UK

Novak, D. A. (2008). Leadership of Organizational Networks: An Exploration of the Relationship between Leadership and Social Networks in Organizations, PhD Dissertation, UMI#3309284

O

O'Brien, J. (Ed.). (2011). *The Production of Reality: Essays and Readings on Social Interaction*. Pine: Forge Press.

Osland, J. S. and Bird, A. (2000). Beyond Sophisticated Stereotyping: Cultural Sensemaking in Context, *Academy of Management Perspectives*, Vol. 14, No.1, pp. 65-77.

P

Padgett, D.K. (Ed.) (2004). *The qualitative research experience*. Pacific Grove, CA: Wadsworth/Thomson Learning

Padgett, D.K. (2008) *Qualitative Methods in Social Work Research*, 2nd ed., Sage: Los Angeles

Parkhe, A., Wasserman, S., & Ralston, D. A. (2006). New Frontiers in Network Theory Development, *Academy of Management Review*, Vol.31, No.3, pp.560-568

Park, S. H., & Ungson, G. R. (2001). Interfirm rivalry and managerial complexity: A conceptual framework of alliance failure. *Organization science*, Vol. 12, No. 1, pp. 37-53 in Parkhe, Wasserman and Ralston (2006) New Frontiers in Network Theory Development, *Academy of Management Review*, Vol.31, No.3, pp.560-568

Parry, Ken W. (1998) Grounded theory and social process: A new direction for leadership research. *Leadership Quarterly*. Spring98, Vol. 9 Issue 1, p85.

Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods* (3rd ed.) Thousand Oaks, CA: Sage in Yin, Robert K., (2009) Case study research: design and methods, fourth edition. Thousand Oaks, CA: Sage Publishing.

Pawłowsky, P. (2001). The Treatment of Organizational Learning in Management Science, Chapter 3, in Dierkes, Berthoin Antal, Child and Nonaka (2001) *Handbook of Organizational Learning and Knowledge*, Oxford University Press, Oxford and New York, NY

Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.

Pettigrew, A. M. (1979). On studying organizational cultures. *Administrative Science Quarterly*, 24, 570-581.

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Phillips, M.E. (1990). *Industry as Cultural Grouping*. (Doctoral dissertation, Graduate School of Management, University of California, Los Angeles), Dissertation Abstracts International (University Microfilms No. DA 9017663).
- Pivcevic, E. (1970). *On the Idea of Phenomenology*. London: Hutchinson University Library, in Cope, Jason (2005). Researching Entrepreneurship through Phenomenological Inquiry: Philosophical and Methodological Issues, *International Small Business Journal*, Vol. 23, no. 2, pp.163-189 (page 164)
- Podolny, J. M. and Baron, J. N. (1997). Resources and Relationships: Social Networks and Mobility in the Workplace, *American Sociological Review*, Vol. 62, No.5, pp.673-693
- Poell, R. F., Chivers, G. E., Van der Krogt, F. J., & Wildemeersch, D. A. (2000). Learning-Network Theory: Organizing the Dynamic Relationships between Learning and Work, *Management and Learning*, Vol. 31, No. 1, pp.25-49
- Polanyi, M. (1966). *The Tacit Dimension*. London: Routledge and Kegan Paul.
- Polanyi, M. (1975) Personal Knowledge, in Polanyi, M and Prosch H. (eds), *Meaning*. Chicago, IL; University of Chicago Press, 22-45 in Tsoukas, H., & Vladimirou, E. (2001) What is Organizational Knowledge, *Journal of Management Studies*, Vol. 38, No. 7, pp.973-993
- Pondy, L. R., Boland, R., & Thomas, H. (Eds.). (1988). *Managing ambiguity and change*. New York: Wiley in Volkema, R. J., Farquhar, K., & Bergmann, T. J. (1996). Third-Party Sense-making in Interpersonal Conflicts at Work: A Theoretical Framework, *Human Relations*, Vol.49, No. 11, pp.1437-1454
- Powell, W. W. (1990). Neither Market nor Hierarchy: Network Forms of Organizations, *Research in Organizational Behavior*, Vol. 12, pp.295-336 in Liebeskind, J. P., Oliver, A. L., Zucker, L., & Brewer, M. (1996) Social Networks, Learning, and Flexibility: Sourcing Scientific Knowledge in New Biotechnology Firms, *Organization Science*, Vol.7, No. 4, pp.428-443
- Powell, W. W., Koput, K. W., & Smith-Doerr, L. (1996). Interorganizational Collaboration and the Locus of Innovation: Networks of Learning in Biotechnology, *Administrative Science Quarterly*, Vol. 41, No.1, pp.116-145
- Prasad, P. (1997). The Protestant Ethic and the Myth of the Frontier: Culture imprints, Organizational Structuring and Workplace Diversity, in Prasad, P et al (Eds.), *Managing the Organizational Melting Pot*. Thousand Oaks, CA: Sage.
- Precker, J. A. (1952). Similarity of Valuing as a Factor in Selection of Peers and Near-Authority Figures, *Journal of Abnormal and Social Psychology* 47, suppl. (April): 406-14, in Granovetter (1973) The Strength of Weak Ties, *American Journal of Sociology*, Vol. 78, No.6, pp.1360-1380
- Putnam, R. D. (1993). The Prosperous Community: Social Capital and Public Life, *American Prospect*, Vol. 13, pp.35-42 in Nahapiet, J. and Ghoshal, S. (1998). Social Capital, Intellectual Capital and

the Organizational Advantage, *The Academy of Management Review*, Vol. 23, No. 2, pp.242-266

R

- Radcliff-Brown, A. R., Evans-Pritchard, E. E., & Eggan, Fred (1952). *Structure and Function in Primitive Society*. London: Cohen & West.
- Rangachari, P. (2009). Knowledge Sharing Networks in Professional Complex Systems, *Journal of Knowledge Management*, Vol. 13, No.3, pp.132-145
- Remenyi, D., Williams, B., Money, A. & Swartz, E. (1998). *Doing Research in Business and Management. An Introduction to Process and Method*, London: Sage in Saunders, M., Lewis, P., & Thornhill, A. (2003). *Research method for business students*, 3rd edition. New York: Prentice Hall.
- Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of knowledge management*, Vol. 9, No. 3, pp. 18-35.
- Ritter, T., Wilkinson, I. F., & Johnston, W. J. (2004). Managing Complex Business Networks, *Industrial Marketing Management*, Vol.33, pp.175-183
- Robertson, R. (1992) *Globalization: Social Theory and Global Culture*, London: Sage.
- Robey, D., Schwaig, K. S., & Jin, L. (2003) Intertwining Material and Virtual Work, *Information and Organization*, Vol. 13, pp.111-129
- Robbins, S. P., & Judge, T. A. (2007). Chapter 17: Organizational Culture. *Organizational behavior*, (12th ed., pp. 570-605). Upper Saddle River, N.J.: Prentice Hall.
- Rogoff, B., & Chavajay, P. (1995). What's become of research on the cultural basis of cognitive development?. *American Psychologist*, Vol. 50, No. 10, pp. 859 in DiMaggio, P. (1997). Culture and Cognition, *Annual Review Sociology*, Vol. 23, pp.263-287
- Rosch, E. & Lloyd, B. B. (Eds.) (1978). *Cognition and categorization*. Hillsdale, NJ: Erlbaum.
- Rosson, P. J., & Ford, I. D. (1982). Manufacturer-Overseas Distributor Relations and Export Performance, *Journal of International Business Studies*, Vol. 13, No. 2, pp.57-72

S

- Sackmann, S. A. (1991). *Cultural Knowledge in Organizations: Exploring the collective mind*. Newbury Park, CA: Sage.
- Sackmann, S. A. (1992) Culture and Sub Cultures: An Analysis of Organizational Knowledge, *Administrative Science Quarterly*, Vol. 37, No. 1, pp. 140-161.

Cross-border Organization & Management of R&D Activities: *The Case of Grundfos A/S*
Marisol S. Jensen

-
- Sackmann, S. A. (1997). *Cultural complexity in organizations: inherent contrasts and contradictions*. Thousand Oaks: Sage Publications.
- Sapir, E. (1929). *The Status of Linguistics as a Science*, p.69.
- Saunders, M., Lewis, P., & Thornhill, A. (2003). *Research method for business students*, 3rd edition. New York: Prentice Hall.
- Savage, C. M. (1990). *Fifth Generation Management*. Digital Press: Woburn, MA in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior, *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.
- Sawhney, M., & Parikh, D. (2001). Where Value Lives in a Networked World, *Harvard Business Review*, Vol. 79, No. 1, pp. 79-90.
- Schein, E. H. (1985). *Organizational Culture and Leadership*, San Francisco, CA: Jossey Bass
- Schein, E. H. (1991). What is culture? In P. J. Frost, L. F. Moore, M. R. Louis, C. C. Lundberg, & J. Martin (Eds.), *Reframing organizational culture* (pp.243-254). Newbury Park: Sage Publications.
- Schein, E. H. (1996). Three Cultures of Management: The Key to Organizational Learning, *Sloan Management Review*, Vol. 38, No. 1, pp.9-20
- Schein, E. H. (2004). *Organizational Culture and Leadership*, San Francisco, CA: Jossey Bass; 3rd Edition
- Scherer, K. R., & Tran, V. (2001). Effects of emotion on the process of organizational learning. *Handbook of organizational learning and knowledge*, 369-392.
- Schmidt, W. V., Conaway, R. N., Easton, S. S. & Wardrope, W. J. (2007). *Communicating globally: Intercultural communication and international business*. Sage. (Chapter 3 p.42)
- Schneider, S. C. & Barsoux, J. (2003) *Managing Across Cultures*. New York: Prentice Hall Financial Times.
- Schulz, M. (2005) *Organizational Learning*, Chapter 18 in The Blackwell Companion to Organizations, Online reference
- Schutz, A. (1967). *The phenomenology of the social world*. Northwestern University Press. In Weick, K. (1995). *Sense-making in Organizations*, Sage Publications: California, USA.
- Schultz, M. (1991) Transition between Symbolic Domains in Organizations. *Organization Studies*, Vol. 12, pp. 489-506
- Scott, J. (1990). *A matter of Record*, Cambridge: Polity in Bryman, A. and Bell, E. (2007) *Business Research Methods*, 2nd ed, Oxford University Press: Oxford page554

-
- Shamir, B. (1991). Meaning, Self and Motivation in Organizations, *Organization Studies*, Vol. 12, No. 3, pp.405-424
- Silvestri, G. T., & Lukasiewicz, J. M. (1987). A look at occupational employment trends to the year 2000. *Monthly Labor Review*, pp. 46-63 in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.
- Simmel, G. (1950). *The isolated individual and the dyad. The Sociology of Georg Simmel*. Free Press, New York, pp. 118-144 in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Simon, H. A. (1997) *Administrative Behavior*, New York in Boutellier, Roman, Gassmann, Oliver, and Von Zedtwitz, Maximilian (2008) *Managing Global Innovation*, Springer-Verlag: Berlin Heidelberg
- Smedlund, A. (2009). Social Network Structures for Explicit, Tacit, and Potential Knowledge, *International Journal of Knowledge Management*, Vol. 5, No.1, pp.78-87
- Smircich, L. (1983). Concepts of Culture and Organizational Analysis. *Administrative Quarterly*, Vol. 28, No. 3, pp. 339-358
- Snow, C. C., Miles, R. E., & Coleman Jr, H. J. (1993). Managing 21st Century Organizations, *Organization Dynamics*, Winter, Vol. 20, No. 3, pp. 5-20.
- Snyder, M. (1979). Self-monitoring processes. *Advances in experimental social psychology*, Vol. 12, pp. 85-128 in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Snyder, M., & Gangestad, S. (1986). On the nature of self-monitoring: matters of assessment, matters of validity. *Journal of personality and social psychology*, Vol. 51, No. 1, pp. 125 in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Snyder, M. (1987). *Public appearances, private realities: The psychology of self-monitoring*. WH Freeman/Times Books/Henry Holt & Co in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Spears, L. & Lawrence, M. (2002) *Focus on Leadership: Servant Leadership for the 21st century*. New York: John Wiley & Sons in Novak (2008) *Leadership of Organizational Networks: An Exploration of the Relationship between Leadership and Social Networks in Organizations*, PhD Dissertation, UMI#3309284
- Spender, J. C. (1989). *Industry recipes: The nature and sources of managerial judgment*. Oxford, UK: Basic Blackwell. (1994), "Knowing, Managing and Learning," *Management Learning*, 25(3),

-
- 387-412 in Bryman, Alan and Bell, Emma (2007) *Business Research Methods*, 2nd ed, Oxford University Press: Oxford page 493
- Spender, J. C. (1996) Making Knowledge the Basis of a Dynamic Theory of the Firm, *Strategic Management Journal*, Vol. 17, Special Issue: Knowledge and the Firm, pp. 45-62
- Spender, J. C. (1996) Organizational Knowledge, Learning and Memory: Three Concepts in Search of a Theory, *Journal of Organizational Change Management*, Vol. 9, No. 1, pp.63-78
- Sproull L, Kiesler S. 1991. *Computers, networks and work*. Scientific American 265: 116–123 in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.
- Staber, U. (2006). Social Capital Processes in Cross-Cultural Management, *International Journal of Cross-Cultural Management*, Vol. 6, No. 2, pp.189-203
- Stacey, R. (2007). The Challenge of Human Interdependence: Consequences for thinking about the day to day practice of management in Organizations, *European Business Review*, Vol.119, No. 4, pp.292-302
- Starbuck, W. H., & Milliken, F. J. (1988). Executives' perceptual filters: What they notice and how they make sense. *The executive effect: Concepts and methods for studying top managers*, 35, 65 in Weick, K. (1995). *Sense-making in Organizations*, Sage Publications: California, USA.
- Stehr N. 1994. *Knowledge Societies*. Sage Publications: London in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.
- Stets, J. E., & Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, Vol. 63, pp. 224-237.
- Stets, J. E., & Burke, P. J. (2003). *A Sociological Approach to Self and Identity*, in M. R. Leary & J. P. Tangney (Eds.), *Handbook of Self and Identity* (pp. 128–152). New York: The Guilford Press.
- Strauss, A. (1987). *Qualitative Analysis for Social Scientists*. Cambridge University Press, Cambridge
- Strauss, A and Corbin, J (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. London: Sage.
- Stryker, S. (1980). *Symbolic interactionism: A social structural version*. Menlo Park: Benjamin Cummings.
- Suddaby, R. (2006). What Grounded theory is not, *Academy of Management Journal*, Vol. 49, No. 4, pp.633–642.
- Swann, W. B. (1984). Quest for accuracy in person perception: a matter of pragmatics. *Psychological review*, 91(4), 457 in Fiske, Susan T (1993) *Social Cognition and Social Perception*, *Annual Review Psychology*, Vol. 44, pp.155-194

Søderberg, A. M. and Vaara, E. (2003) Chapter 2- Theoretical and Methodological Considerations in *Merging Across Borders: People, Cultures and Politics*. Copenhagen: Copenhagen Business School

Sørensen, Olav (2010) *Globalization of R&D Activity and its local impact: The case of Danish Companies in China*, working paper, International Business Centre at the Department of Business and Management, Aalborg University, Denmark

T

Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology*, Vol. 33, No. pp. 1-39.

Taylor, B. C., Irvin, L. R., & Wieland, S. M. (2006). Checking the Map: Critiquing Joanne Martin's Metatheory of Organizational Culture and its Uses in Communication Research, *Communication Theory*, Vol. 16, No. 3, pp. 304-332.

Terpstra, V. & Kenneth, H. D. (1991). *The Cultural Environment of International Business*, 3rd ed., Cincinnati, Ohio: South- Western Publications, in Schmidt, W. V., Conaway, R. N., Easton, S. S. and Wardrope, W. J. (2007). *Communicating globally: Intercultural communication and international business*. Sage. (Chapter 3 p.42)

Thomas, D. C., Cuervo-Cazurra, A., & Brannen, M. Y. (2011). From the Editors: Explaining Theoretical Relationships in International Business Research: Focusing on the Arrows, NOT the Boxes, *Journal of International Business Studies*, Vol. 42, pp.1073-1078

Thomas, G. & James, D. (2006). Re-inventing grounded theory: some questions about theory, ground and discovery. *British Educational Research Journal*, Vol. 32, No. 6, pp. 767-795.

Thornberg, R. (2012). Informed grounded theory, *Scandinavian Journal of Educational Research*, Vol. 56, pp. 243-259.

Thorelli, H. B. (1986). Networks: Between Markets and Hierarchies, *Strategic Management Journal*, Vol. 7, pp.37-51 in Child and Faulkner (1998) *Strategies of Cooperation*, Oxford, p.115

Thorelli, H. (1990). Network: Between markets and hierarchies. In Ford, D. (eds.) *Understanding business markets: Interaction, relationships, networks*, London: Academic Books, pp. 443-58, First published in *Strategic management Journal* 7 (1986): 37-51

Tidd, J., & Bessant, J., (2009) *Managing Innovation- Integrating Technological, Market, and Organizational Change*, 4th ed., Wiley: England

Todeva, E. (2006). *Business Networks: Strategy and Structure*, *Routledge Studies in Business Organization and Networks*: New York

-
- Todeva, E., & Knoke, D. (2002). Strategic alliances and corporate social capital, *Kolner Zeitschrift für Soziologie und Sozialpsychologie*, Vol. 54, No. 2, pp. 345-380, in Todeva, E. (2006). *Business Networks: Strategy and Structure*, Routledge: New York (pp.107)
- Triandis, H. C. (1989). The Self and Social Behavior in Differing Cultural Contexts, *Psychological Review*, Vol. 96, No. 3, pp.506-520
- Trompenaars, F., & Hampden-Turner, C. (1993). *Riding the waves of culture: Understanding Cultural Diversity in Business*. Burr Ridge, IL: Irwin
- Tsai, W. (2001). Knowledge Transfer in Intra-organizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance, *The Academy of Management Journal*, Vol. 44. No. 5, pp.996-1004
- Tsai, W. (2002). Social structure of “coopetition” within a multiunit organization: Coordination, competition, and intra-organizational knowledge sharing, *Organization science*, Vol. 13, No. 2, pp. 179-190.
- Tsai, W. & Ghoshal, S. (1998). Social Capital and Value Creation: The Role of Intrafirm Networks, *The Academy of Management Journal*, Vol. 41, No. 4, pp.464-476
- Tsoukas, H., & Chia, R. (2002). On organizational becoming: Rethinking organizational change. *Organization Science*, Vo. 13, No. 5, pp. 567-582.
- Tsoukas, H., & Vladimirou, E. (2001). What is Organizational Knowledge, *Journal of Management Studies*, Vol. 38, No. 7, pp.973-993
- Tushman, M. L. (1977). Special Boundary Roles in the Innovation Process, *Administrative Science Quarterly*, Vol.22, No.4, pp.587-605
- Tushman, M. L., & Scanlan, T. J. (1981). Boundary Spanning Individuals: Their Role in Information Transfer and Their Antecedents, *Academy of Management Journal*, Vol.24, No.2, pp.289-305
- Tylor, E. B. (1871). *Primitive Culture: Researches Into the Development of Mythology, Philosophy, Religion, Art, and Custom (Vol. 2)* Murray, London

U

-
- Usunier, J-C. (1998). *International and Cross-cultural Management Research*. London: Sage.
- Uzzi, B. (1997). Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness, *Administrative Science Quarterly*, Vol. 42, pp.35-67, in Håkansson and Johanson (2001) *Business Network Learning*, Oxford: Pergamon, pp. 189

V

- Van der Heijden, K., Bradfield, R., Burt, G., Cairns, G., & Wright, G. (2002). *Sixth-Sense: Accelerating Organizational Learning with Scenarios*, Chapter 4: The Impact of Culture and Cultural Assumptions on Strategy, pp.89-114, UK: John Wiley
- Van Maanen, J. & Barley, S. R. (1985). Cultural organization: Fragments of a theory. . In P. J. Frost, L. F. Moore, M. R. Louis, C. C. Lundberg, & J. Martin (Eds.), *Reframing organizational culture* (pp.31-55). Newbury Park: Sage
- Vangen, S., & Huxham, C. (2003). Nurturing Collaborative Relations: Building Trust in Interorganizational Collaboration, *Journal of Applied Behavioral Science*, Vol. 39, pp.5-31
- Vermunt, J.D. (1996) Metacognitive, Cognitive, and Affective Aspects of Learning Styles and Strategies: A Phenomenographic Analysis, *Higher Education*, Vol. 31, pp.25-50
- Volkema, R. J., Farquhar, K., & Bergmann, T. J. (1996). Third-Party Sense-making in Interpersonal Conflicts at Work: A Theoretical Framework, *Human Relations*, Vol.49, No. 11, pp.1437-1454
- Von Wright, G. H. (1971) *Explanation and Understanding*, Ithaca, NY: Cornell University Press, in Argyris, Chris, Putnam, R, and Smith, D.M. (1985) *Action Science: Concepts, Methods, and skills for Research and Intervention*. San Francisco: Jossey-Bass
- Von Zedtwitz, M., and Gassmann, O., (2002) Market versus Technology Drive in R&D Internationalization: four different patterns of managing research and development, *Research Policy*, Vol. 31, p. 569-588
- Vygotsky, L. S. (1987). *The collected works of L. S. Vygotsky* (R. W. Rieber & A. S. Carton, Eds.). New York: Plenum, in Davydov, Vasily V. and Kerr, Stephen T. (1995) The Influence of L. S. Vygotsky on Education Theory, Research, and Practice, *Educational Researcher*, Vol. 24, No. 3, pp. 12-21
- Vygotsky L. S., Rieber, R. W. and Carton, A. S. (1987) *The Collected Works of L. S. Vygotsky*, New York: Plenum Press in Mason, Robert (2007) Culture: An Overlooked Key to Unlocking Organizational Knowledge, Chapter 2 in *Cross-Cultural Perspectives on Knowledge Management*, Pauleen, David, J. (editor), Libraries Unlimited: Westport, Connecticut, USA

W

- Walton, RE. (1989). *Up and Running: Integrating Information Technology and the Organization*. Harvard Business School Press: Boston, MA in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361.
- Wai-chung Yeung, H. (1997). Critical realism and realist research in human geography: a method or a philosophy in search of a method?, *Progress in Human Geography*, Vol. 21, No.1, pp. 51-74, in

-
- Goulding, C. (2002). *Grounded Theory: A Practical Guide for Management, Business and Market Researchers*. London: Sage. Page 77
- Wasserman, S. F. K.(1994). *Social Network Analysis: Methods and applications*, Cambridge: Cambridge University Press in Parkhe, A., Wasserman, S., & Ralston, D. A. (2006). New Frontiers in Network Theory Development, *Academy of Management Review*, Vol.31, No.3, pp.561
- Weber, E. P., & Khademian, A. M. (2008). Wicked Problems, Knowledge Challenges, and Collaborative Capacity Builders in Network Settings, *Public Administration Review*, Vol.68, No. 2, pp.334-349
- Weick, K. (1979.). *The Social Psychology of Organizing*, 2nd ed. McGraw-Hill: New York.
- Weick, K. (1995). *Sense-making in Organizations*, Sage Publications: California, USA.
- Weick, K. (2000). *Making Sense in Organizations*. Sage Publications: UK: Wiley.
- Weick, K. (2009). *Making Sense of the Organization (Volume 2)*. UK: Wiley.
- Wellman, B. (1988). Structural analysis: From method and metaphor to theory and substance in Wellman, B. and Berkowitz, S. D. (Eds.), *Social structures: A network approach*: Chapter 2, pp. 19-61. New York: Cambridge University Press in Parkhe, A., Wasserman, S., & Ralston, D. A. (2006) New Frontiers in Network Theory Development, *Academy of Management Review*, Vol.31, No.3, pp.560-568
- Wenger, E. (1998). *Communities of Practice: Learning, Meaning and Identity*, Cambridge: UK
- Wenger, E. (2009). *Communities of Practice and Social Learning Systems*, pp.76-99, In Blackmore, C. (Editor) *Communities of practice and Social Learning Systems*, Springer Verlag and the Open University
- Wenger, E., McDermott, R. & Snyder, W. M. (2002). *Cultivating Communities of Practice* (Hardcover). Cambridge, MA.: Harvard Business Press; 1 edition.
- Whetton, D. A., and Mackey, A. (2002). A Social Actor Conception of Organizational Identity and Its Implications for the Study of Organizational Reputation, *Business and Society*, Vol. 41, No. 4, pp.393-414
- White, H. C. (1992). *Identity and control: A structural theory of social action*. Princeton University Press in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York
- Whitehead, T. L. (2005). Basic Classical Ethnographic Research Methods: Secondary Data Analysis, Fieldwork, Observations/Participant Observation, and Informal and Semi-structured interviewing, *EICCARS Working Paper Series, Cultural Ecology of Health and Change*, University of Maryland (CuCASG)

Whorf, B. L., & Chase, S. (1956). *Language, Thought and Reality, Selected Writings of Benjamin Lee Whorf*. Edited... by John B. Carroll. Foreword by Stuart Chase. J. B. Carroll (Ed.). Mass., in Pauleen, D. (Ed.). (2007). Cross-cultural perspectives on knowledge management. Libraries Unlimited.

Williams, E. A., Scandura, T. A., & Gavin, M. (2009). Understanding Team-Level Career Mentoring by Leaders and its Effects on Individual Team-Source Learning: The Effects of Intra-Group Processes, *Human Relations*, Vol. 62, No. 11, pp.1635-1666

Wilson, F. (2004). *Organizational Behaviour and Work: A Critical Introduction*. Oxford.

Wood, D. J. & Gray, B. (1991). Toward a Comprehensive Theory of Collaboration, *Journal of Applied Behavioral Science*, Vol. 27, pp.139-162

Woolgar, S. (1998). Knowledge and Reflexivity: New Frontiers in the Sociology of Knowledge. SAGE

Y

Yeniyurt, S., Tamer Cavusgil, S., & Hult, G. T. M. (2005). A Global Market Advantage Framework: The Role of Global Market Knowledge Competencies, *International Business Review*, Vol. 14, pp.1-19

Yin, Robert K., (2009) *Case study research: design and methods*, fourth edition. Thousand Oaks, CA: Sage Publishing.

Z

Zaccaro, S. J., Foti, R. J., & Kenny, D. A. (1991). Self-monitoring and trait-based variance in leadership: An investigation of leader flexibility across multiple group situations. *Journal of Applied Psychology*, Vol. 76, No. 2, pp. 308 in Kilduff and Krackhardt (2008) *Interpersonal Networks in Organizations: Cognition, Personality, Dynamics and Culture*, Cambridge University Press: New York

Zaki, J. (2013). Cue Integration: A Common Framework for Social Cognition and Physical Perception, *Perspectives on Psychological Science*, Vol. 8, pp.296-312

Zellmer-Bruhn, M., & Gibson, C. (2006). Multinational Organization Context: Implications for Team Learning and Performance, *Academy of Management Journal*, Vol. 49, No. 3, pp.501-518

Zuboff, S. (1988). *In the Age of the Smart Machine*. Basic Books: New York in Perlow, L., & Weeks, J. (2002). Who's helping whom? Layers of culture and workplace behavior. *Journal of Organizational Behavior*, Vol. 23, No. 4, pp. 345-361

1 Appendix: Summary list of Internationalization of Grundfos A/s

Country	Company	Est.
Germany	GWS	1960
UK	GB	1964
Netherlands	GNL	1970
Austria	GPO	1971
France Manufacturing	PGF	1972
UK manufacturing	GBW	1973
USA manufacturing	GMU	1973
USA	GPU	1973
Belgium	GBL	1976
Switzerland	GPS	1978
Sweden	GSV	1980
Australia	GPA	1980
Spain	BGE	1982
Singapore	GSI	1984
Ireland	GPI	1984
Japan	GJK	1986
Hong Kong	GHK	1986
Italy	GIT	1988
France	GFD	1988
United Arab Emirates	GGD	1989
Korea	GPK	1989
Norway	GNO	1990
Malaysia	GPM	1990
Indonesia	GAS	1990
Finland	GSF	1992
Canada	GCA	1992
Taiwan	GTS	1992
Switzerland (Biral)	BIR	1993
Greece	GPH	1993
Thailand	GTH	1993
Mexico	GMX	1994
Poland	GPL	1995

China Manufacturing	GPC	1995
Argentina	BGA	1995
Denmark	GDK	1996
Hungary	GHU	1996
Czech Republic	GCZ	1996
Italy (DAB)	DAB	1996
New Zealand	GNZ	1996
Turkey	GTR	1996
Italy (Leader)	LPG	1998
Brazil	GBR	1998
India	GIN	1998
Germany (Vortex)	VOR	1999
Russia	GMO	1999
Estonia	GST	2000
Latvia	GLA	2000
Lithuania	GLI	2000
Hungary Manufacturing	GMH	2000
Finland (SARLIN)	GEF	2000
Korea (Chung suk)	CSK	2002
Switzerland (Arnold)	GAM	2002
Brazil (Mark Peerless)	GBR	2003
Germany (Hilge)	GHI	2004
Ukraine	GUA	2004
Germany (Alldos)	ALD	2005
Italy (Tesla)	TSL	2005
South Africa	GZA	2005
Romania	GRO	2006
South Africa (Brisan Turbo)	GZA	2006
USA (Paco)	GCB	2006
Denmark (Wåge U)?		2006
UK (Watermill)	WGB	2006
Mexico (Peerless Pumps)	PPX	2007
Korea (Keum Jung I)	KJI	2007
USA (Yeoman Chicago Corp.)	YCC	2008

2 Appendix: Data Collected- Grundfos Denmark R&D Interviews

	CODE	# OF INT.	DATE	DURATION	REC Y/N	LOCATION	MISC.	PRIORITY LEVEL 1-3
1	DK010	1	JUNE 3, 2009	1:02:07	Y	DK	R&T	1
2	DK012	1	JUNE 24, 2009	1:06:22	Y	DK	R&T	1
3	DK019	1	JUNE 30, 2009	0:49:04	Y	DK	R&T	1
4	DK018	1	JUNE 30, 2009	0:16:12	Y	DK	R&T	1
5	DK015	1	JULY 20, 2009	0:54:09	Y	DK	R&T	1
6	DK013	1	JUNE 2, 2009	0:30:00	N	DK	R&T	1
7	DK014	2	JUNE 2, 2009	0:20:00	N	DK	R&T	1
8	DK017	1	JULY 6, 2009	0:44:04	Y	DK	R&T	1
9	DK016	1	JULY 7, 2009	0:31:37	Y	DK	R&T	1
10	DK011	1	JUNE 3, 2009	0:39:02	Y	DK	R&T	1
11	DK021	1	JUNE 29, 2009	1:01:27	Y	DK	R&T	2
12	DK022	1	JUNE 30, 2009	0:21:54	Y	DK	R&T	2
13	DK11	1	JULY 1, 2009	0:33:36	Y	DK	R&T	2
14	DK020	1	JULY 9, 2009	0:58:04	Y	DK	R&T	2
15	DK023	1	JULY 1, 2009	0:27:30	Y	DK	R&T	2
16	NOT USED/ NO RELEVANCY	1	JULY 6, 2009	0:27:00	Y	DK	R&T	3
17	NOT USED/ NO RELEVANCY	1	JULY 6, 2009	0:30:42	Y	DK	R&T	3
18	NOT USED/ NO RELEVANCY	1	JUNE 29, 2009	0:05:00	N	DK	R&T	3
19	DK001	1	AUG 10, 2009	0:24:30	Y	DK	D&E	1
20	DK002	1	OCT 1, 2009	0:30:59	Y	DK	D&E	1
21	DK003	1	AUG 10, 2009	0:45:15	Y	DK	D&E	1
22	DK004	1	AUG 18, 2009	0:34:09	Y	DK	D&E	1
23	DK005	1	AUG 18, 2009	0:36:58	Y	DK	D&E	1
24	DK006	1	AUG 15, 2009	0:39:25	Y	DK	D&E	1
25	DK007	1	AUG 28, 2009	0:12:58	Y	DK	D&E	1
26	NOT USED/ NO RELEVANCY	1	AUG 15, 2009		N	DK	D&E	3
27	NOT USED/ NO RELEVANCY	1	AUG 15, 2009	0:20:50	Y	DK	D&E	3
28	NOT USED/ NO RELEVANCY	1	AUG 15, 2009	0:04:23	Y	DK	D&E	3
29	NOT USED/ NO RELEVANCY	1	AUG 15, 2009		N	DK	D&E	3
30	NOT USED/ NO RELEVANCY	1	AUG 10, 2009		N	DK	D&E	3
31	DK008	1 of 2	AUG 5, 2009	0:57:30	Y	DK	GLOBAL MGRS	1
32	DK009	1 of 3	AUG 21, 2009	1:03:25	Y	DK	GLOBAL MGRS	1
33	NOT ATTRIBUTED CODE	1	MAY 26, 2009		N	DK	GLOBAL MGRS	1
34	NOT ATTRIBUTED CODE	1	OCT 28, 2009		N	DK	MGR	3
35	NOT ATTRIBUTED CODE	1	AUG 16, 2009	0:22:22	Y	DK	GLOBAL MGRS	3
36	DK014	2 of 2	JULY 8, 2009	1:45:20	Y	DK	MGR	3
37	NOT ATTRIBUTED CODE	1 PART 1	OCT 1, 2009	1:04:14	Y	DK	CONSULTANT	1
38	NOT ATTRIBUTED CODE	2 PART 2	OCT 1, 2009	0:25:12	Y	DK	CONSULTANT	1
39	DK015 NOT USED	1	JAN 2, 2010		N	DK	MGR	1
40	DK024	1	JULY 8, 2009	0:54:01	Y	DK	HR	1

3 Appendix: Data Collected- Grundfos US R&D Interviews

	CODE	# OF INT.	DATE	DURATION	REC Y/N	LOCATION	MISC.	PRIORITY LEVEL 1-3
1	USA006	2 of 3	MAR 15, 2010	1:00:00	N	US		1
2	USA001	1	MAR 16, 2010	0:43:50	Y	US		1
3	USA001b	1	MAR 16, 2010	0:15:41	Y	US		1
4	USA005	1	MAR 15, 2010	0:40:48	Y	US	CZONE	1
5	USA002	1	MAR 15, 2010	0:57:36	Y	US		1
6	USA004	1	MAR 16, 2010	0:52:21	Y	US		1
7	USA003	1	MAR 15, 2010	1:16:39	Y	US		1
8	USA006	3 of 3	MAR 16, 2010	0:30:00	N	US		1

4 Appendix: Data Collected- Grundfos China R&D Interviews

	CODE	# OF INT.	DATE	DURATION	REC Y/N	LOCATION	MISC.	PRIORITY LEVEL 1-3
1	C001	1	OCT 11, 2010	0:43:14	Y	CN	SHANGHAI	1
2	C002	1	OCT 18, 2010	0:45:00	Y	CN	SHANGHAI	1
3	C003	1	SEPT 29, 2010	0:38:48	Y	CN	SUZHOU	2
4	C004	1	OCT 21, 2010	0:26:20	Y	CN	SHANGHAI	1
5	C005	1	OCT 28, 2010	0:12:40	Y	CN	SUZHOU	2
6	C006	1	OCT 27, 2010	0:15:28	Y	CN	SUZHOU	1
7	C007	1	OCT 27, 2010	0:25:41	Y	CN	SUZHOU	2
8	C008	1	OCT 26, 2010	0:40:50	Y	CN	SUZHOU	1
9	C009	1	OCT 28, 2010	0:20:41	Y	CN	SUZHOU	2
10	C010	1	SEPT 30, 2010	1:06:36	Y	CN	SUZHOU	1
11	C011	1	OCT 25, 2010	0:31:25	Y	CN	SUZHOU	1
12	C012	1	OCT 13, 2010	0:33:58	Y	CN	SUZHOU	1
13	C013	1	OCT 27, 2010	0:13:22	Y	CN	SUZHOU	2
14	C014	1	OCT 27, 2010	0:19:48	Y	CN	SUZHOU	2
15	C015	1	OCT 26, 2010	0:37:50	Y	CN	SUZHOU	1
16	C016	1	OCT 25, 2010	0:30:24	Y	CN	SUZHOU	1
17	C017	1	OCT 25, 2010	0:20:26	Y	CN	SUZHOU	1
18	C018	1	OCT 25, 2010	0:30:56	Y	CN	SUZHOU	1
19	C019	1	OCT 28, 2010	0:31:08	Y	CN	SUZHOU	1
20	C020	1	OCT 21, 2010	0:39:46	Y	CN	SHANGHAI	1
21	C021	1	SEPT 30, 2010	0:45:43	Y	CN	SUZHOU	1
22	C022	1	SEPT 29, 2010	0:19:09	Y	CN	SUZHOU	1
23	C023	1	SEPT 24, 2010	1:01:03	Y	CN	SUZHOU	1
24	C024	1	SEPT 29, 2010	0:51:06	Y	CN	SUZHOU	1
25	C025	1	SEPT 28, 2010	0:34:02	Y	CN	SUZHOU	1
26	C026	3 of 3	SEPT 23, 2010	0:45:18	Y	CN	SUZHOU	1
27	C027	1	SEPT 21, 2010	1:41:23	Y	CN	SUZHOU	1
28	C028	PART 1	SEPT 16, 2010	0:55:43	Y	CN	SUZHOU	1
28	C028	PART 2	SEPT 16, 2010	1:01:46	Y	CN	SUZHOU	1
29	C029	1	SEPT 24, 2010	1:16:11	Y	CN	SUZHOU	1
30	NOT ATTRIBUTED CODE	1	OCT 21, 2010	0:38:21		CN	STANFORD	2

5 Appendix : Data Collected- Documents: Grundfos— General Company Information

DATE	TYPE	DOCUMENT NAME	DESCRIPTION
2007	BOOK	1 THE GRUNDFOS BOOK- MORE THAN PUMPS	OLAV BALLISAGER
	POWERPOINT	2 CORPORATE PRESENTATION	ORGANIZATION, HISTORY, VALUES, BUSINESS AREAS, SALES & SERVICE, CERTIFICATES, SUPPLY CHAIN, KEY FIGURES, & THE FUTURE
2010	INSITE PRINTOUT	3 GROUP STRATEGY	ON INSITES
(SEPT 2010)	BROCHURE	4 GROUP STRATEGY 2010-2014	FOCUS ON STRATEGIC THEMES
2007	BOOKLET	5 GRUNDFOS MISSION, VISION, AND COMPANY VALUES	VALUES (BOTH DANISH AND ENGLISH VERSIONS)
2007	INSITE PRINTOUT	6 THE FOUR WAVES OF CHANGE IN GRUNDFOS	ON INSITES
(JULY 2009)	INSITE PRINTOUT	7 OUR COMPANY CULTURE	ON INSITES
(JULY 2009)	INSITE PRINTOUT	8 OUR COMPANY CULTURE- VALUE-BASED MANAGEMENT	ON INSITES
(JULY 2009)	INSITE PRINTOUT	9 FACTS ABOUT THE LEARNING ORGANIZATION	ON INSITES
FEB 2008	WHITE PAPER	10 GRUNDFOS INNOVATION INTENT	CARSTEN BJERG
P.3		CHOOSING OUR FUTURE	
P.4		GLOBAL CHALLENGES AFFECTING OUR BUSINESS	
P.7		A NEW GUIDING STAR & OUR THREE CHALLENGES	
P.9		HOW WILL THE INNOVATION INTENT CHANGE GRUNDFOS?	
P.11		TRANSFORMING GRUNDFOS	
(JULY 2009)	INSITE PRINTOUT	11 INNOVATION INTENT WORLD TOUR	CARSTEN BJERG'S PRESENT INNOV INTENT 4 ALL COMPANIES
	POWERPOINT	12 GRUNDFOS INNOVATION INTENT (WITH CARSTEN BJERG)	FOCUS ON THINKING ABOUT THE FUTURE
(JULY 2009)	INSITE PRINTOUT	13 THE DREAM	FOCUS ON THE FUTURE 2025...
	REPORT	14 GRUNDFOS INNOVATION EXCELLENCE MODEL & DESCRIPTION	ON INSITES
(SEPT 2010)	POWERPOINT	15 GRUNDFOS INNOVATION MODEL (FROM CHINA)	FIGURE PUT UP IN THE BATHROOM WALLS
2000	REPORT	16 CULTURE STUDY	OLAV BALLISAGER
AUG 2009	REPORT	17 KULTUR OG SAMMENHÆNGSKRAFT I GRUNDFOS	A REPORT BY OLAV BALLISAGER (DANISH)
P.12-30		EXTERNAL PERCEPTIONS OF GRUNDFOS	
P.32-		INTERNAL PERSPECTIVES & INTERNAL INSTITUTIONS	ESPECIALLY INSIGHTFUL: SUMMARY OF INTERVIEWS
P.63-65		CONCLUSIONS	CULTURE AMBASSADORS & OTHER FACILITATORS

6 Appendix: Data Collected- Documents: Grundfos—Company Reports & Magazine Articles

DATE	TYPE	DOCUMENT NAME	DESCRIPTION
2006	REPORT	18 SUSTAINABILITY REPORT 2006	
P.2	PREFACE	SUSTAINABILITY AS A GUIDING PRINCIPLE	FROM NIELS DUE JENSEN & CARSTEN BJERG
P.6		BUSINESS CONTEXT	FOCUS ON CONTEXT
P.7		FIGURE 1- OWNERSHIP AND CORPORATE STRUCTURE	FACTS
P.11		FIGURE 6 - BUSINESS PRINCIPLES	FOCUS ON BE THINK INNOVATE
P.21		FIGURE 12 - THE VALUE WHEEL	FOCUS ON BE THINK INNOVATE
NO. 102 JUL 2008	MAGAZINE	WORLDWIDE	
P.4-5	ARTICLE	INNOVATION INTENT- WHAT'S NEXT?	for employees of the Grundfos Group
P.6-7	ARTICLE	20 PART OF THE GRUNDFOS FUTURE START'S HERE	INNOVATION INTENT
P.10-11	ARTICLE	21 NAMREG ON ITS WAY TOWARDS NEW GOALS	FOCUS ON CHINA
			FOCUS ON US
NO. 1 FEB 2009	MAGAZINE	G MAGAZINE (DANISH)	
P.12-13	ARTICLE	22 ANOTHER INVESTMENT IN THE US	for employees of the Grundfos Group
P.15	ARTICLE	23 A NEW MANUFACT. PLANT IN CHINA (SUZHOU)	FOCUS ON ACQUISITION OF YEOMAN/US GROWTH
P.20-21	ARTICLE	24 THEY CREATE INFINITELY	FOCUS ON GROWTH - CHINA
P.30-31	ARTICLE	25 INTERNATIONAL NETWORK DEVELOPED IN QUALITY WEEK	FOCUS ON R&T -EBBE & RUNE
			FOCUS ON GROWTH
NO.5 JUL 2010	MAGAZINE	G MAGAZINE	
P.10-11	ARTICLE	26 WHAT'S THIS? ARE YOU TRYING TO INTERFERE?	for employees of the Grundfos Group
P.21	ARTICLE	27 R&D EMPLOYEES OUT OF THE OFFICES	FOCUS ON EMPLOYEE INVOLVEMENT
P.42-43	ARTICLE	28 STIRRED BY IDEAS AND DEVELOPMENT	FOCUS ON CREATIVITY & HANDS ON APPROACH
P.58-59	ARTICLE	29 GRUNDFOS' VALUES ARE IMPORTANT	FOCUS ON BUSINESS DEVELOPMENT
P.65	ARTICLE	30 ALL ABOARD!	FOCUS ON THE CFO
			FOCUS ON CHINA GROWTH
2009	POWERPOINT	31 GLOBAL WORKING CULTURE PROJECT	
MAR 23 2009	POWERPOINT	32 GRUNDFOS GLOBAL WORKING WORKSHOP SUMMARY	PEOPLE AND STRATEGY ORGANIZED EVENT
APRIL 2009	POWERPOINT	33 REFLECTIONS ON THE GRUNDFOS GLOBAL WORKING WORKSHOP	WORKSHOP WAS DIVIDED INTO FOUR PARTS
			SHM PRODUCTIONS REFLECTIONS

7 Appendix: Data Collected- Documents: Grundfos— R&D Specific Documents

DATE	TYPE		DOCUMENT NAME	DESCRIPTION
MAY 2008	POWERPOINT	34	PRESENTATION OF THE NEW BD STRUCTURE	
JUNE 2008	POWERPOINT	35	PRESENTATION OF STRUCTURE & ORGANIZATION	
	POWERPOINT	36	THE CHANGE AGENDA OF R&T	
	POWERPOINT	37	THE CHANGE AGENDA OF D&E	
FEB 2009	REPORT	38	BUSINESS DEVELOPMENT ORGANIZATION	INTRODUCTION TO BUSINESS DEVELOPMENT ORG.
P.4-15			FUNCTIONAL DESCRIPTIONS	
P.16-24			WHO IS WHO- CONTACT POINTS	ORGANIZATIONAL STRUCTURE CHARTS & DIAGRAMS
P.25-26			PRODUCT MANAGEMENT	
P.27			OVERVIEW OF LINKS TO BD-ORGANIZATION	
JUNE 2009	POWERPOINT	39	GLOBAL TECHNICAL COMPETENCE NETWORKS	HENRIK Ø. PEDERSEN (GLOBAL TECHNOLOGY MANAGER)
AUG 2010	POWERPOINT	40	GLOBAL R&D ORGANIZATION- GLOBAL TECHNICAL COMPETENCE NETWORK	HENRIK Ø. PEDERSEN (GLOBAL TECHNOLOGY MANAGER)
	POWERPOINT	41	FINANCIAL PERSPECTIVE: TO BE A SUCCESS -HOW SHOULD WE APPEAR TO OUR STAKEHOLDERS?	
JULY 2009	INSITE PRINTOUT	42	GLOBAL COLLABORATION GUIDE	ON GRUNDFOS INSITES
2007	POWERPOINT	43	GLOBAL R&D- THE BEGINNINGS	STATUS REPORT OF 2006 & PLANS FOR INTL OF R&D 2007
2009	POWERPOINT	44	VISIONEN FOR GETTING GLOBAL R&D	STATUS REPORT WITH SUGGESTIONS (DANISH)
2009	POWERPOINT	45	R&D STRATEGY MAP	FROM OBJECTIVES TO INITIATIVES (STEFAN)
P.3			ACTION PLAN FOR R&D STRATEGY 2009-2010	
P.5			TIMELINE WITH DETAILS	
P.7			STRATEGY FUTURE R&D NOW	
P.8-11			PLANS FOR D&E WREG; R&D HUNGARY; R&D AMERICA; R&D CHINA	
2009	POWERPOINT	46	GLOBAL R&D VISION	FEW NEW SLIDES, OTHERWISE SAME AS ABOVE (STEFAN)
			CHARACTERISTICS OF GLOBAL R&D VISION	

8 Appendix: Data Collected- Documents: Grundfos R&D—Future R&D Now Event Documents

DATE	TYPE	DOCUMENT NAME	DESCRIPTION
AUG 13 2009	DOCUMENTS	47 KICK OFF MEETING WITH MANAGERS	(OFFICIAL GRUNDFOS NOTES (DANISH))
		48 ROAD MAP FOR PROJECT (INTRA-ORGANIZATIONAL)	(DANISH)
		49 ROAD MAP FOR PROJECT (PRIVATE FOR ORGANIZERS)	(DANISH)
SEPT 22, 23, 24, 28, & OCT 1, 6, 9 2009		50 7 SEPARATE KICK OFF MEETING WITH EMPLOYEES: WORKSHOP SELECTION FORMS	(DANISH) COMPLETED BY ALL EMPLOYEES SELECTED TOP 3 WORKSHOPS
OCT 19 2009	POWERPOINT	51 INFO MEETING FOR WORKSHOP LEADERS	BREAKDOWN OF ALL IMPORTANT INFORMATION (DANISH)
OCT 20 2009	POWERPOINT	52 FUTURE R&D NOW CHALLENGES	SUMMARY OF MEETING
DEC 10-11, 2009		8850 WORKSHOP	
DEC 10, 2009	DOCUMENT	53 EXERCISES	
DEC 10, 2009	QUESTIONNAIRE	54 BLACK BOX EXERCISE (COLLECTED)	EXERCISE COLLECTING EVERYONE'S FEARS (DANISH)
DEC 11 2009	POWERPOINT	55 CHALLENGES & HOW TO TACKLE	BASED ON DISCUSSIONS FROM WORKSHOP
DEC 11 2009	POWERPOINT	56 FINAL PRESENTATION TO R&T AND D&E MANAGERS	AT THE END OF THE TWO DAY WORKSHOP MGRS
		57 SONG LYRICS: GREAT PEOPLE ON A GOOD DAY	SONG TO ACCOMPANY EVENT
JAN 14 2010	POWERPOINT	58 FINAL FUTURE R&D NOW PRESENTATION	ALL WORKSHOPS
FEB 1 2010	DOCUMENT/EMAIL	59 MEETING WITH MANAGEMENT	AFTER REVISING, GLOBAL R&D TEAM GETS TO PRESENT AGAIN

9 Appendix: Data Collected- Documents: Grundfos R&D—Secondary Data Sources & in the Media

SECONDARY DATA SOURCES- PROJECTS/STUDIES			
DATE	TYPE	DOCUMENT NAME	DESCRIPTION
2008 (2009)	POWERPOINT	60 TRULY GLOBAL?	FOCUS CATIA WITH LARS P. HANSEN (STANFORD)
JUNE 2009	DOCUMENT	61 A BOTTOM-UP APPROACH TO INCREASE COLLABORATION EFFECTIVENESS IN OUR GLOBAL GRUNDFOS R&D ORGANIZATION	BY RASMUS K. URESM IN CONNECTION WITH THE GLOBALIZATION COMMITTEE THAT I OBSERVED/ PARTICIPATED
2006	CPH	62 LEARNING THE CHINESE WAY	UNIVERSITY OF COPENHAGEN (ACCESSED OLAV B.)
2006	LIT.	63 SUCCESS FACTOR: CORPORATE CULTURE	SACKMAN CASE STUDY
2007	AAU	64 INTERNATIONALIZATION OF DANISH COMPANIES' R&D	10TH SEMESTER MATERS PROJECT
2007	AAU	65 THE CREATION OF GLOBAL GRUNDFOS R&D NETWORK	MASTER THESIS
2009	AAU	66 CULTURAL DIVERSITY IN MULTICULTURAL ORGANIZATIONS	MASTER THESIS
2010	AAU	67 INTERNATIONALIZATION OF R&D IN GRUNDFOS	8TH SEMESTER MASTER'S PROJECT
DOCUMENTS IN THE MEDIA			
SEPT 8, 2009	ARTICLE	68 THE DANISH MIRACLE	IET COLLECTIVE INSPIRATION VITALI VITALEV
SEPT 25, 2009	ARTICLE	69 PÅ GRUNDFOS- MISSION I KINA	BERLINGSKE NYHEDSMAGASIN (DANISH) ANDERS ROOSTGAARD
JUNE 19, 2009	ARTICLE	70 OPGØRET MED VESTEN	BERLINGSKE NYHEDSMAGASIN (DANISH) ANDERS ROOSTGAARD
SEPT 2009	ARTICLE	71 GRUNDFOS EXPANDS IN THE BALKANS	WORLD PUMPS
JULY 2006	ARTICLE	72 GRUNDFOS MOVES FURTHER FORWARD	WORLD PUMPS

10 Appendix: Data Collected-Observations: Grundfos R&D

	ACTIVITIES	TOTAL-PARTICIPANT	RESEARCH & PARTICIPANT	TOTAL- RESEARCHER
	FUTURE R&D NOW			
1	FUTURE R&D NOW KICK START MEETING (MGRS) (AUGUST 13, 2009)			(X)
2	FUTURE R&D NOW KICK START MEETING (EMPLOYEES)		X	(X)
3	8850 COMMITTEE	X	(X)	X
4	8850 COMMITTEE PRE-WORKSHOP QUESTIONNAIRE	X	(X)	X
5	8850 WORKSHOP	(X)	(X)	(X)
6	MY PRESENTATION ON GLOBAL MINDSET		(X)	
7	8850 EVALUATION & ACTION MEETINGS			(X)
8	FINAL PRESENTATION (JAN 28, 2010)			(X)
9	AFTER EFFECTS OF FUTURE R&D NOW			(X)
10	GLOBAL COMMITTEE		X	(X)
11	CARSTEN BIERG BIG MEETING (AUGUST 26, 2009)			(X)
12	GENERAL MEETINGS		X	(X)
13	BEHAVIOR AT MEETINGS			(X)
14	R&D UNIT RELATIONSHIP W/LOCAL GRUNDFOS SITE			(X)



SUMMARY

This study investigates intra-organizational multi-national knowledge networks in large organizations such as the case company, Grundfos, specifically the internationalization of their R&D activities. This study uses qualitative methodology with focus on Interpretivist and Constructivist epistemological and ontological paradigms, respectively. In line with these methodological choices and also due to the close collaboration with Grundfos this study has followed a multi-perspective approach combining: case study, grounded theory and action research all with the aim of remaining true to the empirical phenomena and providing the best results for both academia and business practice. This study makes three major contributions: First, it presents a new understanding of culture in organizations as culture at the micro-practical level/focus where we understand culture through the individual and their interactions. Second, it reveals a much needed focus on the individual and their interactions in business that is centered around the very same—individuals unique contributions and the innovation that occurs through collaboration. Third, it provides new directions for navigating complex, long-term focused networks where a clear emphasis on context over culture for a resolute focus on the roles and purposes of intra-organizational multi-national knowledge networks within complex organizations. This focus leads to revelations of the importance of relationships and the need for individuals in the networks to build relationships based on mutual needs. The data has shown the importance of trust in these relationships and how it enhances relational bonds. Growing an individual's network is a by-product of the work they do and the relationships they nurture; thus, placing emphasis on credibility and influence in network interactions. This dissertation also contributes to the growing need to fill the need in the ever changing dynamics/context within intra-organizational multi-national knowledge networks in large organizations such as MNCs and such as the case company, Grundfos and their Global R&D Network.